Relatively similar: Relative clause typology and sign languages

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1 Introduction¹

- → Due to the unique possibilities made available by the visual-gestural modality (as well as due to the constraints imposed by it), sign languages (SLs) are more similar to each other than spoken languages: the Variation Hypothesis (Meier 2002).
- → Still, SLs clearly differ from each other along well-defined lines w.r.t. the expression of certain grammatical features such as interrogativity (Zeshan 2004b), negation (Pfau 2002; Pfau & Quer 2002; Zeshan 2004a), plurality (Pfau & Steinbach 2006), and classification (Nyst 2007), amongst others (see Perniss et al. (in press) for an overview).
- → In this talk, we will consider the typological variation as attested in the domain of relativization by discussing the relativization strategies of Italian SL (*Lingua Italiana dei Segni*: LIS) and German SL (*Deutsche Gebärdensprache*: DGS).
- → We discuss the SL data against the background of the typological variation attested across spoken languages, thereby showing (i) that the two SLs clearly differ from each other in their relativization strategies but (ii) do so along the same lines as spoken languages do.

2 A typological perspective on relative clauses

- → Relative clause (RC) constructions are known to show considerable typological variation across languages (Keenan 1985; Lehmann 1986).
- → Parameters to be considered: (i) post- vs. pre-nominal RCs; (ii) externally vs. internally headed relatives; (iii) use of relative pronoun (RPRO) or relative complementizer; (iv) restrictive vs. appositive RCs.
- → In head-external RCs, the head noun (HN) is outside of the RC. Head-external RCs may be post-nominal, as in English (1a) and German (1b), or pre-nominal, as in Japanese ((2a); McCawley 1972:205) and Basque ((2b); Keenan & Comrie 1977:72).
- (1) a. $[[The girl]_{HN} [(who) I met yesterday]_{RC}]$ seemed to like me
 - b. Ich lese [[das Buch]_{HN}, [das du mir empfohlen hast]_{RC}] I read the book RPRO you me recommend.PART have.2SG 'I read the book which you have recommended to me.'
- - b. [[gizon-a-k liburu-a eman dio-n]_{RC} [**emakume-a**]_{HN}] man-the-SUBJ book-the give has-REL woman-the 'the woman that the man has given the book to'

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- → Externally headed RC, whether pre- or post-nominal, contrast as a class with internally headed RCs in which the head noun occurs within the RC. Consider the examples from Diegueño ((3a); Keenan 1985:162) and Quechua ((3b); Cole 1987:279).
- (3) a. [tənay [?əwa:ø]_{HN} ?əwu:w-pu-L^y]_{RC} ?ciyawx yesterday house-DO 1.SG.saw-DEF-in 1SG.FUT.sing 'I will sing in the house that I saw yesterday.'
 - b. $[nuna \ [bestya-ta]_{HN} \ ranti-shaq-n]_{RC}$ all bestya-m ka-rqo-n man horse-ACC buy-PERF-3 good horse-EVID be-PAST-3 'The horse that the man bought was a good horse.'
- \rightarrow In both cases, the head noun is clearly a constituent of the RC. Note that in (3a) the adverbial *tənay* scopes over the RC predicate, not the main clause predicate.
- \rightarrow The above examples also illustrate a difference w.r.t. the use of relative pronouns. According to Keenan (1985), RPROs are limited to post-nominal RCs (1), where they typically occur leftmost in the RC, and they are never observed in head-internal RCs (3).
- → RPROs are commonly related to determiners, demonstratives, or interrogatives. For instance, the English RPRO (1a) is identical to an interrogative pronoun while the German RPRO (1b) is identical to a definite article
- → Besides relative pronouns, some languages use relative complementizers. This is illustrated in (4) from Zurich Swiss German, in which the RC is introduced by the (relative) complementizer *wo* (Salzmann 2006:321); also note the use of the resumptive pronoun *em* ('him').
- (4) [[de Bueb]_{HN}, [wo mer em es Velo versproche händ]_{RC}] the boy COMP we him a bike promised have.1PL 'the boy we promised a bike'
- \rightarrow A final distinction to be made is the distinction between restrictive and appositive RCs where the former pick a candidate from a set (5a) while the latter do not function to constrain the domain of relativization (5b).
- (5) a. $[[The book]_{HN} [that I read last week]_{RC}]$ was a bit disappointing
 - b. $[[My mother]_{HN} [who just came back from Ibiza]_{RC}]$ has a beautiful suntan
- \rightarrow Keenan (1985) points out that the syntax of non-restrictive RCs in a language is largely similar to that of restrictive RCs, except some small differences (e.g. ban on certain RPROS, comma intonation).

3 Relative clauses in Italian Sign Language (LIS)

3.1 Basic properties

- \rightarrow The basic word order of LIS is SOV, with functional elements such as aspectual markers, modals, and negation as well as wh-signs following the verb.
- → LIS signers make use of a specialized syntactic structure for relativization, a bi-clausal structure with the RC in sentence-initial position followed by the main clause. The RC (labeled "PE-clause" by Branchini & Donati (in press)) cannot be produced in isolation.

- \rightarrow The RC obligatorily contains the sign PE in clause-final position. PE is realized with the index finger pointing downward and slightly shaken; it is accompanied by a mouth gesture (a labial stop).
- → The examples in (6) illustrate different grammatical functions of the head noun within the main and the PE-clause: in (6a), MAN is subject of main and PE-clause; in (6b), DOG is object of main and PE-clause; in (6c) CHILD is subject of the PE-clause but object of the main clause; in (6d), IDEA is subject of the main clause but object of the PE-clause (see Branchini & Donati (in press) for combinations including adjuncts).
- (6) a. $[TODAY MAN_i PIE BRING PE_i]$ YESTERDAY (INDEX_i) DANCE 'The man that brought the pie today danced yesterday.' rel
 - b. [YESTERDAY DOG_i FIND PE_i] PAOLO_k INDEX_k (INDEX_i) WASH 'Paolo washed the dog that I found yesterday.'

rel

- c. [CHILD_i COMPETITION WIN PE_i] TEACHER PRIZE (INDEX_i) GIVE 'The teacher gives the prize to the child who wins the competition.' <u>rel</u>
- d. [PAOLO MARIA **IDEA**_i SUGGEST PE_i] (INDEX_i) IMPORTANT 'The idea that Paolo suggested to Maria is important'
- \rightarrow PE is co-referential with an NP within the PE-clause; co-referentiality can be realized through agreement in space. The RC never contains a relative or *wh*-pronoun.
- → The main clause, which can be uttered in isolation, contains an optional indexical sign that is co-referential with the head noun (and hence with PE).
- → The non-manual marking glossed as 'rel' consists of raised eyebrows and tension of eyes and upper cheeks. Most frequently, the non-manual accompanies the entire PE-clause (as in (6)), but occasionally, it is co-articulated with PE only.
- \rightarrow Just as in the Diegueño example (3a), the adverbial preceding the head noun in (6ab) scopes over the RC-predicate thus indicating that the head noun occupies a position internal to the RC.

3.2 The status of the PE-clause

- \rightarrow Branchini & Donati (in press) show that the PE-clause is a nominal clause (i.e. a relative), thereby arguing against a correlative analysis as brought forward in Cecchetto et al. (2006) (see section 3.4).
- \rightarrow First of all, they show that the sign PE is not used exclusively in relativization but also in nominal contexts, as illustrated in (7). In these contexts, PE appears to carry out the function of a determiner nominalizing the constituent.

(7)	a.	FIRST PE	b.	SMALL PE
		'the first one'		'the small one'

 \rightarrow Second, in specific contexts (analyzed as the equivalent of cleft constructions by Branchini (2006)), PE can also co-occur with an NP, acting as a determiner strongly marking the referent, as in (8) ('rb' = raised brows).

rb

- (8) HOUSE_i PE_i ANNA BUY WANT'It is a house that Anna wants to buy'
- \rightarrow Third, the PE-clause can be modified by ordinals. In (9a), the ordinal *first* modifies the entire RC [*the woman I kissed*] not just the NP *woman*. Since ordinals can only modify order nominals but not clauses, (9a) is evidence for the nominal status of the RC.
- (9) a. FIRST WOMAN_i KISS_i PE_i NOW BANK WORK 'The first woman I kissed now works in a bank.' rel
 - b. CHILD_i PE_i COMPETITION WIN TEACHER PRIZE GIVE_i 'The teacher gives a prize to the child who wins the competition.'
- → Finally, by analyzing PE as a determiner, we can also account for its optional (though marginal) occurrence right-adjacent to the head noun, as in (9b) (also see Cecchetto et al. (2006)).

3.3 Position of the RC

- \rightarrow The PE-clause never occurs in the position where it is interpreted inside the main clause (i.e. the base position for RCs), as shown by the ungrammaticality of (10a).
- \rightarrow Rather, the PE-clause is always extraposed. The informants show a strong preference for sentence-initial positioning of the PE-clause (10b) although sentence-final positioning is also accepted (10c), but only if the head noun is extraposed, too (10d).
- (10) a. * TEACHER [CHILD_i COMPETITION WIN PE_i] PRIZE GIVE_i
 - b. CHILD_i COMPETITION WIN PE_i TEACHER PRIZE GIVE_i rel
 - c. TEACHER PRIZE GIVE_i CHILD_i COMPETITION WIN PE_i rel
 - d. * TEACHER PRIZE CHILD_i GIVE_i COMPETITION WIN PE_i 'The teacher gives a prize to the child who wins the competition'
- \rightarrow Note that in LIS, subordinate clauses are always extraposed, probably due to a cognitive ban against center-embedding. While the base order is SOV (11a), complement clauses either have to appear in sentence-final position (11c) or have to be topicalized (11d); they cannot appear in their base-position (11b) ('te' = tensed eyes).
- (11) a. PAOLO APPLE WANT 'Paolo wants an apple'
 - b. * paolo [maria house buy] want
 - c. PAOLO WANT [MARIA HOUSE BUY]
 - d. [MARIA HOUSE BUY] PAOLO WANT 'Paolo wants Maria to buy a house.'

3.4 The typological picture

- → Based on the above evidence, Branchini (2006) and Branchini & Donati (in press) argue that LIS has internally headed relatives with PE being a sentence-final determiner.
- → A similar relativization strategy is attested in other head-final languages. Japanese (12a), Quechua (12b), and Tibetan (12c), e.g., also have internally headed RCs that display determiner-like elements (a nominalizer morpheme or a free determiner) at the right edge of the RC (Shimoyama 1999:147; Comrie 1981:139; Keenan 1985:161).
- (12) a. Yoko-wa [[Taro-ga sara-no ue-ni keeki-o iota]-no]-o tabeta Yoko-TOP Taro-NOM plate-GEN on-LOC cake-ACC put NML ACC ate 'Yoko ate a cake which Taro put on the plate.'
 - b. [[Kan kwitsa-man kwintu-ta willa]-**shka**]-ka llapa sumaj-mi you girl-to story-ACC tell **NML** TOP very pretty-VALIDATOR 'The girl to whom you told the story is very pretty.'
 - c. [[Peemɛ thep khii-pa] the] nee yin Peem.ERG book.ABS carry-PART the.ABS I.GEN be 'The book Peem carried is mine.'
- → Interestingly, just like PE, the Japanese determiner-like element *-no* occurs in a number of contexts in which it carries out the function of a nominalizer. Compare the examples in (13) (Karine Arnéodo, p.c.) to the LIS examples in (7).

(13) a.	saisho-no	b.	chishai-no
	'the first one'		'the little one'

- → Note that a different account for the LIS facts is given by Cecchetto et al. (2006) who analyze LIS RCs as correlatives (see Brunelli (2006) for yet another account).
- \rightarrow In contrast to RCs, correlatives look like main clauses. They do not contain a pronoun/gap but a full noun phrase that is marked by a correlative marker and that corresponds to a noun phrase in the main clause; see the Hindi example in (14) (Keenan 1985:164).
- (14) [**Jis** a:dmi ka kutta bema:r hai] us a:dmi ko mai ne dekha COREL man GEN dog sick is that man DO I ERG saw 'I saw the man whose dog is sick.'
- → Amongst the arguments that Branchini & Donati (in press) provide against a correlative analysis are: (i) the head noun cannot be fully repeated in the main clause (15a), and (ii) while RC-stacking is not allowed in correlatives, it is possible in LIS (15b).
- (15) a. * $\overline{\text{DOG}_i \text{ CAT CHASE PE}_i \text{ DOG}_i \text{ HOME COME DONE}}$ 'The dog that chased the cat came home.'
 - b. VASE_i SEE DONE PE_i TODAY BUY PE_i EXPENSIVE 'The vase that I saw that I bought today is expensive.'
- \rightarrow Finally, LIS RCs have been tested against some properties associated with a restrictive and an appositive reading. The results uniformly point toward a restrictive interpretation of the PE-clause (also contra Cecchetto et al. (2006)).

rel

4 Relative clauses in German Sign Language (DGS)

4.1 Basic properties

- → Just as in LIS, the basic word order in DGS is SOV, with functional elements and whsigns following the verb. Still, DGS RCs are different in almost every respect.
- \rightarrow In DGS, RCs follow the head noun and are introduced by a RPRO (see section 4.2 for details). Again, we illustrate different grammatical functions of the head noun within the main and the RC-clause.
- \rightarrow In (16a), MAN is subject of main clause and RC; in (16b), GIRL is object of main clause and RC; in (16c), POSS₂ FRIEND is subject of the main clause but object of the RC clause.
 - rel
- (16) a. TOMORROW [MAN (INDEX_{3a}) [RPRO_{3a} TIE BUY]] CONFERENCE_{3b} GO-TO_{3b} 'Tomorrow the man who is buying a tie will go to a conference.' rel
 - b. MONDAY INDEX₁ [**GIRL** (INDEX₃) [**R**PRO₃ INDEX₂ LIKE ₂PAM₃]] ₁VISIT₃ 'On Monday, I will visit the girl who you like.'
 - rel
 - c. [**POSS₂ FRIEND** (INDEX₃) [RPRO₃ INDEX₁ PARTY MEET]] EAT A-LOT 'Your friend whom I met at the party eats a lot.'
- → In DGS, the non-manual marker 'rel' consists of raised eyebrows (similar to topic marking) and a slight body lean towards the location of RPRO. Note that in (16), the non-manual marker only accompanies RPRO. Optionally, it may spread over the entire RC, as in (17a) from Happ & Vorköper (2006:483).

rel

- (17) a. YESTERDAY CITY INDEX_{3a} INDEX₁ [MAN [$\overline{RPRO_{3a}}$ SIGN COURSE_{3b} VISIT_{3b}]] MEET 'Yesterday I met the man in the city who is attending the sign language course.' rel
 - b. * [**POSS₂ FRIEND** (INDEX₃) [RPRO₃ INDEX₁ **INDEX₃** PARTY MEET]] A-LOT EAT 'Your friend whom I met at the party eats a lot.'
- \rightarrow In contrast to the LIS examples in (6ab), the adverbial preceding the head noun in (16ab) scopes over the matrix predicate not the RC-predicate.
- → Also in contrast to LIS, the head noun cannot be doubled in the main clause by means of a (resumptive) indexical sign, as is illustrated in (17b) above.
- → Finally, Happ & Vorköper (2006:487) report a difference between restrictive and appositive RCs. Appositive RCs are not introduced by RPRO and are accompanied by a different non-manual marker ('app': pursed lips, slight headnod), as in (18).
- (18) EIGHTEEN CENTURY EIGHT NINETY, EIFFELTOWER, [INDEX₂ KNOW PARIS IX₃], BUILD 'In 1889, the Eiffeltower, which is in Paris, was built/completed.'
- → Further research is needed to determine whether the pattern in (18) is generally observed with appositive RCs or whether it is possibly restricted to non-modifiable states. Actually, (18) resembles a parenthetical; note the presence of the verb KNOW.

4.2 **Properties of RPRO**

 \rightarrow In all of the above examples, the head noun is [+human]. Actually, DGS has two different RPROS, one for entities referring to humans (RPRO-H), which has the classifier handshape for humans, and one for entities referring to non-humans (RPRO-NH), which is identical to the pointing sign used for personal and demonstrative pronouns (see figure 2 below).

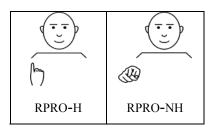


Figure 2: DGS relative pronouns

→ Both RPROs target a position in the signing space referring to the head noun. When the RC occupies the base position adjacent to the head noun (as in (16)), INDEX and RPRO are usually collapsed into one, especially with [-human] head nouns (19), i.e. RPRO can introduce a location for the head noun.

 (19) a. [BOY [RPRO-H_{3a} CAT STROKE] POSS₁ BROTHER 'The boy who is stroking the cat is my brother.' <u>rel</u>
b. [BOOK [RPRO-NH_{3a} POSS₁ FATHER READ]] INTERESTING

6. [BOOK [RPRO-NH_{3a} POSS₁ FATHER READ]] INTERESTING 'The book that my father is reading is interesting.'

4.3 Position of the RC

- \rightarrow In all of the above examples and in (20a) below, the RC appears right adjacent to the head noun. This, however, is not the only option for RC placement in DGS.
- → First of all, DGS RCs can occur sentence-initially. Topicalization affects the whole noun phrase containing the RC; head noun and RC receive non-manual topic marking (20b). Topicalization of the RC without the head noun is ungrammatical (20c).
- (20) a. INDEX₁ [BOOK [RPRO-NH₃ POSS₁ FATHER READ]] BUY 'I bought the book that my father is reading.'
 - b. [BOOK [RPRO-NH₃ POSS₁ FATHER READ]] INDEX₁ BUY 'The book that my father is reading, I bought (it).'
 - c. * [RPRO-NH₃ POSS₁ FATHER READ] INDEX₁ BOOK BUY
- → Moreover, DGS RCs are commonly extraposed to sentence-final position (21a). Unlike topicalization, extraposition affects only the RC, as is illustrated by the ungrammaticality of (21b).
- \rightarrow With extraposed RCs, both the INDEX accompanying the head noun and the RPRO are usually used (21a). Note that some native signers prefer topicalization to extraposition.

(21) a. INDEX₁ [BOOK INDEX₃] BUY [RPRO-NH₃ POSS₁ FATHER READ] 'I bought the book that my father is reading.' ______rel

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b. * INDEX_1 BUY [BOOK [RPRO-NH_3 POSS_1 FATHER READ]]
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- \rightarrow In (20) and (21), the head noun is object of matrix clause and RC. However, the above observations also hold for other grammatical functions of the head noun.
- \rightarrow Note that, just as in LIS, subordinate clauses in DGS are obligatorily extraposed, as shown by the ungrammaticality of (22a).
- (22) a. * INDEX₃ [INDEX_{2 2}HeLP₃ MUST] SAY
 - b. INDEX₃ SAY [INDEX₂ ₂HELP₃ MUST] 'He says that you must help him.'

4.4 The typological picture

- → Based on the above evidence, Pfau & Steinbach (2005) argue that DGS, just like spoken German (1b), has post-nominal externally headed RCs that are introduced by a RPRO and that RPRO agrees with the head noun with respect to $[\pm human]$.
- \rightarrow Extraposition of the RC is possible and actually quite common. Again, this pattern is reminiscent of the one found in spoken German, where RCs are frequently extraposed, as can be seen in the embedded clauses in (23).
- (23) a. weil ich [das Buch [das mein Vater liest]] gekauft habe because I the book RPRO my father reads buy.PART have.1SG
 - b. weil ich [das Buch] gekauft habe [das mein Vater liest] because I the book buy.PART have.1SG RPRO my father reads '... because I have bought the book that my father is reading.'
- → Pfau & Steinbach (2005) show that extraposition of the RC to sentence-final position is less constrained in DGS than in German. They relate this to the fact that in DGS, the RPRO always unambiguously identifies the head noun.
- → Moreover, in German, extraposition of a RC modifying a subject is blocked even if the morphosyntactic specification (gender agreement) of RPRO unambiguously identifies the head noun; compare (24a) with (24b).
- (24) a. WOMAN **INDEX**_{3a} MAN INDEX_{3b} LIKE PAM_{3b} [**RPRO-H**_{3a} CAT STROKE] 'The woman_i likes the man who_i is stroking the cat.'
 - b. * Die Frau mag den Mann, **die** die Katze streichelt the woman likes the man RPRO.F the cat strokes 'The woman_i likes the man who_i is stroking the cat.'
- → An issue that we hope to address in future research are possible syntactic and prosodic differences between restrictive and appositive RCs in DGS. Given examples like (18), one may expect to find typologically remarkable patterns in this area.

5 Other sign languages

- → According to Liddell (1978, 1980) <u>American Sign Language</u> (ASL) displays both internally and externally headed RCs (see Fontana (1990) for comparison to Diegueño; see Coulter (1983) for a conjunction analysis).
- → In (25a), the non-manual marker ('r': brow raise, backward head tilt, upper lip raised) extends over the head noun DOG and the adverbial preceding the head noun scopes over the embedded predicate (Liddell 1980:148) cf. the LIS examples (6ab).
- → Optionally, the RC contains the sign $THAT_a$, very similar to a demonstrative, that marks the clause as subordinate (labelled "relative conjunction" by Liddell). THAT_a appears either adjacent to the head noun (25a) or in sentence-initial position (25b) (Liddell 1980:159).

r

(25) a. [RECENTLY DOG (THAT_a) CHASE CAT] COME HOME 'The dog which recently chased the cat came home.' 'The cat which the dog recently chased came home.' $-\underline{i}$

- → In contrast, in externally headed RCs, the non-manual marker extends only over the RC but not over the head noun, as shown in (26) (Liddell 1980:162). Note that Quechua, e.g., also allows for externally and internally headed RCs (Cole 1987; Basilico 1996).
- \rightarrow ASL RCs are strongly preferred in sentence-initial position. In sentence-final position, they are followed by an affirmative nod and/or by the sign THAT (26b) (Liddell 1980:147).
- (26) a. ASK₃ GIVE₁ [DOG [URSULA KICK] THAT_c] 'I asked him/her to give me the dog that Ursula kicked'
 - b. INDEX₁ FEED [[\overline{DOG} BITE CAT THAT_b] THAT_c] 'I fed the cat that the dog bit'
- \rightarrow Finally, according to Liddell, both externally- and internally headed RCs receive a restrictive interpretation.
- → In sum, ASL partially overlaps with LIS w.r.t. to the use of internally headed RCs which preferably occupy a sentence-initial position. In contrast to ASL, however, in LIS the use of a determiner-like element (PE) which occupies a RC-final position is obligatory (the different position of the determiner-like element in LIS and ASL is probably due to their different linear order, SOV and SVO, respectively).
- → As opposed to ASL and LIS, <u>Brazilian Sign Language</u> (LSB) has head-external RCs without a RPRO/complementizer. The RC in (27a) corresponds to reduced RCs in English (Nunes & de Quadros 2004). Besides, LSB also has head-internal RCs similar to those described for ASL and LIS above (de Quadros, personal communication).
- (27) a. GIRL [FALL BICYCLE] STAY HOSPITAL 'The girl that fell off from the bicycle is in hospital.'
 - b. [[BOOK[^]THERE] [INDEX₃ WRITE]] INTERESTING 'The book he wrote is interesting.'

b. THAT_a CHASE CAT DOG RUN-AWAY 'The dog that chased the cat ran away'

- \rightarrow Sandler (1999:206) gives one example of a RC in <u>Israeli Sign Language</u> (ISL). Based on the non-manual markings (very much simplified in (27b)), we can tentatively conclude that, just as in LIS, one relativization strategy in ISL are internally headed RCs.
- → As far as the relativization strategy is concerned. LSB seems to pattern with DGS while ISL is closer to LIS/ASL. Of all the SLs, DGS is the only one that makes use of a relative pronoun.

6 Conclusion

- → A typological comparison of LIS and DGS in the syntactic domain of relativization shows that the two SLs make use of different relativization strategies. Both strategies fit well into the typological pattern identified for oral languages.
- → LIS makes use of nominal head-internal RCs that contain the clause-final determiner-like element PE. The RC typically appears sentence-initially but can also be extraposed to sentence-final position.
- → In contrast, DGS has post-nominal externally headed RCs that are introduced by a relative pronoun. RCs either appear adjacent to the head noun (i.e. in their base position) or are extraposed to sentence-final position.
- \rightarrow Clearly, the pattern found in DGS relativization is more similar to the German pattern than it is to the LIS pattern contra the Variation Hypothesis. In the domain of relativization, SLs exhibit the same diversity as oral languages.
- \rightarrow In LIS and DGS, as well as in the SLs mentioned in section 5, non-manual markers play a crucial role in relativization. Specific characteristics of these markers may shed light on the syntax of relative constructions in SLs.
- → Note that we take it to be no coincidence that the marker 'rel' is quite similar to topic marking. Cross-linguistically, RCs are known to share interesting properties with topic constructions (Lewkowicz 1971; Schachter 1973; Wilbur & Patschke 1999).

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