

Relative Clauses in HPSG

Pollard & Sag 1994, ch. 5

Laura Kassner

Seminar für Sprachwissenschaft
Eberhard Karls Universität Tübingen

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Outline

- 1 English Relative Clauses - Introduction
- 2 Wh-Relatives
 - The Singleton Rel Constraint
 - The Relative Uniqueness Principle
 - The Top of the Relative Clause
- 3 Non-Wh-Relatives
- 4 Relative Clauses and the Complex NP Constraint

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Categorization

- **wh-relatives**
 - **subject** the person who left
 - **non-subject** the person who I talked to _____
- **non-wh-relatives**
 - **that** the person that I talked to _____
the person that left
 - **that-less** the person I talked to _____
 - **infinitival** the person to talk to _____
- **not occurring in English**
 - **relative-correlative constructions** (languages from Indian subcontinent)
 - **internally headed relative clauses** (Quechua, Navajo)

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What constitutes a relative clause?

- initial constituent: a wh-phrase
- followed by S[INHER|SLASH{NP}] or finite VP
- wh-phrase makes the superordinate structure **relative**...
- ...in the same way as a trace makes a construction slashed

wh-dependencies

are treated in a similar way as filler-gap constructions, but they are more constrained.

A First Constraint

- REL is a **set** of indices. . .
- . . . but we never have more than **one** relative word in an English relative clause!

SINGLETON REL CONSTRAINT:

The cardinality of the value of INHER|REL is at most 1.

Note: Other languages, e.g. Marathi and Lakota, do not obey this constraint.

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More Similarities

- SLASH and REL can occur simultaneously
- REL dependencies are unbounded, like SLASH

Here's the rabbi [[[whose brother's] Bar Mitzvah] we attended].

Here's the rabbi [[[[whose brother's] son's] Bar Mitzvah] we attended].

Here's the rabbi [[[[[whose brother's] son's] friend's] Bar Mitzvah] we attended].

Here's the minister[[in [the middle [of [whose sermon]]]] the dog barked].

- can be embedded in phrases
- pied piping is possible
- unified treatment of filler-gap dependencies and pied piping via the NONLOCAL Feature Principle

More Differences

? John Smith, whose wife's feelings about whom have changed but little over the years

- 'parasitic' relatives are unstable in English

Remember: REL is more constrained than SLASH.

A Second Constraint

- the singleton rel constraint alone cannot exclude these unstable sentences
- to avoid them, assume a further constraint:

RELATIVE UNIQUENESS PRINCIPLE:

A member of the INHERITED|REL set on a headed constituent may be inherited from (i.e. may belong to the INHERITED|REL set of) at most one daughter.

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Requirements

- relative clauses have non-empty value for MOD
- must guarantee the following:
 - the index of the daughter N' must be identified with the REL value of the relative clause
 - the INHER|REL value on the mother N' is empty (terminate REL dependency)
 - the restriction set of the mother's content includes the content of the relative clause
- posit a phonetically null 'complementizer' as the head of the relative clause - the **relativizer**: p. 213 (15)

Problems

- * Here's the student [Kim likes whom].
- * Here's the student [bagels, Sandy gave to whom].
- * Here's the student [Dana met whose sister].
 - clauses bearing nonempty INHER|REL values are allowed in our grammar
 - introduce a new constraint to forbid these sentences

First Draft:

No member of the INHERITED|REL set on a headed constituent may be inherited from (i.e. belong to the INHERITED|REL set of) a daughter that is the head of S.

- forbids sentences where rel-inheritance passes through the VP, the head of the S
- does not forbid cases of blocked pied piping

No Clauses with INHER|REL

- * Here is the student [[to claim who was unpopular] would be ridiculous].
- * The elegant parties, [for us to be admitted to one of which] was a privilege, had usually been held at Delmonico's.

But:

The elegant parties, [to be admitted to one of which] was a privilege, had usually been held at Delmonico's.

- VP with non-empty INHER|REL is okay
- **clauses** in English need to have a null INHER|REL!

How to save our analysis

- modify the relativizer to avoid S with nonempty INHER|REL set: p. 216 (24)
- new relativizer can be subjected to Subject Extraction
Lexical Rule: p. 218 (28)
- now we can formulate the following constraint:

CLAUSAL REL PROHIBITION:

The INHER|REL value of S must be empty.

Note: This can vary across languages.

Summary

Constraints:

- **THE SINGLETON REL CONSTRAINT:** The cardinality of the value of `INHER|REL` is at most 1.
- **RELATIVE UNIQUENESS PRINCIPLE:** A member of the `INHERITED|REL` set on a headed constituent may be inherited from (i.e. may belong to the `INHERITED|REL` set of) at most one daughter.
- **CLAUSAL REL PROHIBITION:** The `INHER|REL` value of `S` must be empty.

Summary

Relativizers

- revised base form, for non-subject relative clauses: p. 216 (24)
- SELR-version for subject relative clauses: p. 218 (28)

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Real or Fake?

Real: Here's the student [that I was telling you about ____].

Here's the student [I was telling you about ____].

Fake: Here's the student [that was telling you about cell structure].

- "that" is a wh-relative word (that simply does not start with wh) whose CASE = nominative - p. 220 (33)
- can appear together with SELR output relativizer, like "who"
- can't appear as an object of a verb or preposition or as a possessor

Treatment of non-wh-relative clauses

- posit a second null relativizer: p. 222 (36)
- main difference: subcategorizes for a finite S; INHER|REL 1 is introduced by the relativizer
- SELR can't be applied to this new null relativizer
- ungrammatical sentences are avoided:
 - * Here is the [book [pleased Sandy]].
 - * I met a [lawyer [helped me a lot]].

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Short Recap

Remember:

Complex NP Constraint bars movement out of a clause adjoined to a nominal constituent (p. 205).

This was proved avoidable/wrong for some constructions.

Relative clause constructions are still pending.

* Which student_i did you find [a book_j [which_j [Pat gave ____j to ____i]]]?

* Which proposal_i did you find [students_j [who_j [they had talked to ____j about ____i]]]?

- incompatible with the relativizers we formulated:
INHER|SLASH sets contain two entries
- complex NP constraint therefore not needed here

Extraction from Relative Clauses

That's one trick that I've known a lot of people who've been taken in by ____.

This is a paper that we really need to find someone who understands ____.

- grammatical in some varieties of English
- ungrammatical in our analysis: the SELR variant of the relativizer used for the inner relative clause requires that its VP complement have an empty INHER|SLASH set, and these haven't

- if SELR output did not specify INHER|SLASH, they would be grammatical, and the following contrast would be explainable:

Which woman_i do men who meet ____i usually ask ____i out?

* Which woman_i do men who meet ____i usually leave town?

- parasitic gap inside relative clause allowed
- "leave" with nothing but the subject slashed is not allowed
- but: no specification of INHER|SLASH leads to acceptance of too many sentences

An Unresolved Problem

- maybe modify the SELR in general - how?
- underspecification of INHER|SLASH value would transfer original INHER|SLASH value unchanged to the output. . .
- . . . which is not desirable - the relativizer specifies that INHER|SLASH is nonempty, so the SELR variant would always ask for a nonempty INHER|SLASH, too!
- need to prevent the VP complement of the SELR variant from having the same INHER|SLASH element as the input
- how this is done is left unresolved :(

Thank you...

...for your attention!