Relative Clauses in HPSG
Pollard & Sag 1994, ch. 5

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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.
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.
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
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 do men who meet ___ usually ask ___ out?
* Which woman do men who meet ___ 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!