

Semantic change

The 5,000-year history of relative clauses in English
Part 1: Theory and typology

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Preamble

- ▶ This case study is joint work with Nik Gisborne, partially reported in Truswell & Gisborne (2015), Gisborne & Truswell (2015).
- ▶ It has two main goals:
 1. It shows some of the complexities of large-scale change, and implies certain criteria of adequacy that a theory of change should satisfy.
 2. I'm obsessed with relatives right now and won't be able to avoid talking about them in any case.
- ▶ We are interested in the development of *wh*-forms from Proto-Indo-European to Present-Day English
- ▶ There are syntactic and semantic (etc.) aspects to these developments (as is often the case).
- ▶ One reason not to ignore syntax: evidence for meaning in texts of dead languages is quite indirect. Basic distributional facts can feed semantic analysis in the absence of reliable intuitions about meaning.

Syntactic preliminaries

- ▶ All the relative clauses we're interested in are CPs. They can be subclassified in various ways. Three binary distinctions are of immediate relevance.
 1. Does CP modify NP (**headed relatives**) or does it function as NP in its own right (**free relatives**)?
 2. Among headed relatives:
 - 2.1 Is [Spec,CP] filled or empty?
 - 2.2 Is C⁰ filled or empty?

- (1) a. I'll have the food

which that		which
that		∅

 she's having.
- b. I'll have what she's having.

- (2) blisfulnesse is [_{NP} that thing [_{CP} [for whiche] that [_{IP} alle thise othere thinges ben desired]]] (cmboeth,434.C1.226)

Specifier vs. complementizer

- ▶ We distinguish filled [Spec,CP] from filled C^0 in three ways:
 1. Order: [Spec,CP] precedes C^0 (**that for whiche ...*).
 2. Complexity: [Spec,CP] can be phrasal; C^0 can't (**for that ...*).
 3. Connectivity: [Spec,CP] can reflect properties of the gap site; C^0 kind of can too (the *que/qui*-alternation) but in a more restricted way.
- ▶ We'll talk about *relative specifiers/complementizers*; also *headed relative specifiers, free relative complementizers, etc.*
- ▶ The specifier/complementizer distinction is similar to relative pronouns vs. relative particles, but on more principled syntactic grounds and with cleaner typological results.

Headed relative specifiers are a mainly IE thing

- ▶ Headed relative specifiers have an unusual typological distribution.

	IE	Other
Spec	27 (67.5%)	7 (5.3%)
<i>Wh</i>	19 (47.5%)	3 (2.3%)
<i>Dem</i>	8 (20%)	4 (3%)
No Spec	13 (32.5%)	125 (94.7%)

Table 1 : Dependent relative specifiers in 172 languages (based on De Vries 2002)

Adjoined relatives in IE

- ▶ The synchronic typological distribution does not reflect inheritance from a common ancestor.
- ▶ Clackson (2007): PIE probably didn't have headed relatives, but only two types of adjoined relative.
 1. Correlatives: RC left-adjoined to matrix.
 2. "Inverted correlatives": RC right-adjoined to matrix.

- (3)
- a. jo laRkii khaRii hai vo lambii hai
rel girl standing is dem tall is
- b. vo laRkii lambii hai jo khaRii hai
dem girl tall is rel standing is
"The girl who is standing is tall"

(Hindi, Srivastav 1991: 639–40)

- ▶ The syntactic and semantic typology of correlatives is a matter of current research.
- ▶ Following Srivastav, everyone agrees that "inverted correlative" is a misnomer: (3b) is a type of extraposition.

Examples from early IE

- (4) paprizzi huiš 3 GÍN KÙ.BABBAR pāi
is impure wh 3 shekels of silver he gives
“The one who is impure, he gives three shekels of silver”
(Hittite, 2nd millennium BC, Garrett 2008)
- (5) Quibus diebus Cumae liberatae sunt obsidione,
which days.abl Cuma released was from the siege
isdem diebus ... Tib. Sempronius ... prospere
the same days.abl T.S. wins
pugnat
a victory
“T.S. won a victory in the same days in which Cuma was
released from the siege.” (Latin, Livius 23.37.10, 1st century
BC Bianchi 2000:54)
- ▶ Also Greek, Sanskrit, etc.
 - ▶ The above are both definite; generalizing examples also common (sometimes with different word order).

Interrogatives and demonstratives

- ▶ Early IE adjoined relatives have filled specifiers, typically formed with one of two series of nominals (traditionally, and misleadingly, “pronouns”).
 1. $*k^w i-$ / $k^w o-$: also indefinite, interrogative, typically clause-initial.
 2. $*se-$ / $jo-$: also demonstrative, typically clause-final.
- ▶ Relative specifiers in embedded relatives have emerged repeatedly in the history of IE from this initial state, but only rarely elsewhere.
- ▶ Claim: Every language that has headed relative specifiers at time t_i had adjoined relatives with filled specifiers at some antecedent time t_{i-k} .
- ▶ Although I'll use the cover term “correlative” here, it is likely that even superficially similar examples have different properties across languages.
- ▶ In particular, some “correlatives” may actually be what De Vries (2002) calls “hanging topic free relatives”.

The same pattern elsewhere

- ▶ Non-IE cases of headed relative specifiers include Finno-Ugric (e.g. Hungarian (6)) and Bambara (7).

- (6) a. Amit Mari tegnap főzött, azt nem ette
what-acc Mari yesterday cooked that-acc not ate
meg János
pv John
“John did not eat what Mari cooked yesterday.”
- b. János azt a levest amit Mari
John that-acc the soup-acc rel-what-acc Mari
tegnap főzött megette
yesterday cooked ate
“John ate up the soup that Mari cooked yesterday.”

(Hungarian. Lipták 2008)

The same pattern elsewhere

- (7) a. mùso mìn be fìni mìn ka di n yè fère,
woman wh- compl cloth wh- is nice to me sell he
à ye ò fùru
compl that marry
“The woman who sells the cloth that I like, he married
that one.”
- b. tyè ` ye mùru `, n ye min ye sà̀n
man spec compl knife spec I compl which see buy
“The man bought the knife, the one which I saw.”

(Bambara, Bird 1968)

- ▶ Correlatives are not wildly common crosslinguistically.
- ▶ 14% of languages in De Vries 2002 have them; 10.5% of non-IE languages, 25% of IE languages.

Syntactic and semantic pathways

- ▶ Belyaev & Haug (2014) ground the prehistory of the relative correlative construction in conditional structures. We add a possible syntactic pathway from correlatives to headed relative specifiers, in four stages.
 1. Conditional
 2. Correlative
 3. Clause-final free relative
 4. Extraposed (headed) relative
 5. Integrated headed relative
- ▶ This correlates loosely with a semantic pathway, given provisionally below (also extending Belyaev & Haug 2014; see also Haspelmath 1997).
 1. “Indefinite”
 2. “Generalizing”
 3. “Definite”
 4. “Restrictive”

Pathways: Comments

- ▶ Evidence for the pathways is often indirect (e.g. typological implicational relations).
- ▶ We're going to look mainly at direct diachronic evidence from English for syntactic stages 2–5 and semantic stages 2–4.
- ▶ Immediate tasks are to work out the connections between the two pathways, and formalize the stages in the semantic pathway.
- ▶ These pathways are probably not the only way to get from PIE to headed relative specifiers.
 - ▶ Languages with non-*wh* headed relative specifiers will need something else.
 - ▶ Russian too, it seems (discussion skipped).

So the goal here is to work out *a* pathway, not *the* pathway.

Semantic preliminaries

Strange relatives of the third kind

- ▶ Grosu & Landman (1998) distinguished two semantic classes of relative clause: one with the noun interpreted inside the RC and one outside.
- ▶ Canonical example of RC-external interpretation: standard restrictive relatives.

- (8) a. The books that/which were on the table
 b. $\iota x.\text{books}(x) \wedge \text{on.table}(x)$

- ▶ Major example of RC-internal interpretation: degree relatives, which are more complicated. . .

Degree relative semantics

- (9)
- a. The books that/*which there were on the table
 - b. The d s.t. there were d -many books on the table.
 - c. $\{\langle |\sqcup\{x \in \text{book} : O(x)\}|, \text{books}, \sqcup\{x \in \text{book} : O(x)\} \rangle\}$
Roughly: “The maximal amount of books on the table, measured as books, which is instantiated by $\sqcup\{x \in \text{book} : O(x)\}$ ”
- (10) requires *that* rather than *which* because the relative denotes a predicate over degrees (not individuals), and *which* cannot abstract over degrees.

Maximality and RC-internal interpretation

- ▶ Full NP denotation typically something like substance((8c)).
- ▶ RC-external material mainly recapitulates elements already interpreted RC-internally.
- ▶ Crucially, maximality already entailed RC-internally.

(10) I took with me every/the three/*few/*some books
that there were on the table.

- ▶ Grosu & Landman's generalization: if the head noun is interpreted RC-internally (as diagnosed by maximality), the RC determines the interpretation of the whole NP (any RC-external material recapitulates meaning components determined RC-internally).
- ▶ Other key examples include free relatives and correlatives.

Maximality in free relatives

- ▶ Jacobson (1995): although *whatever*-FRs tend to be generalizing, because *-ever* is a universal quantifier (e.g. Larson 1987), there is a double dissociation between use of *-ever* and generalizing interpretation.

(11) a. I ate what he cooked (Probably definite)
b. Do what the babysitter tells you
(Probably generalizing)

(12) a. Everyone who has seen whatever movie the Avon
is now showing has said it was very boring
(Probably definite)
b. I ate whatever he cooked (in those days)
(Probably generalizing)

- ▶ Conclusion: free relatives are definite descriptions.

Definite vs. generalizing

- ▶ Dayal (1997): FR interpretation largely dependent on matrix interpretation.
 - ▶ Episodic statements → definite FRs.
 - ▶ Generic statements → generalizing FRs.
- ▶ Conclusion: free relatives denote maximal individuals relative to situations. Quantification over situations then indirectly quantifies over individuals within situations.

The interpretation of *-ever*

- ▶ von Fintel (2000): *-ever* is not a universal.
- ▶ It presupposes that, within some set of worlds, regardless of the identity of the individual picked out by the FR, the same state of affairs would have arisen.

(13) *whatever*(w)(F)(P)(Q)

a. presupposes:

$\forall w' \in \min_w [F \cap (\lambda w'. \iota x. P(w')(x) \neq \iota x. P(w)(x))] :$
 $Q(w')(\iota x. P(w')(x)) = Q(w)(\iota x. P(w)(x))$

b. asserts: $Q(w)(\iota x. P(w)(x))$ (von Fintel 2000)

Where w is a variable over worlds, F is a modal base, P is the free relative denotation, Q is the predicate of which the free relative is an argument.

Ignorance and indifference

- ▶ Two major uses of *-ever* are labelled *ignorance* and *indifference*.

(14) Ignorance:

- a. There's a lot of garlic in whatever Arlo's cooking (#in this case, porridge).
- b. Arlo may be cooking different things in different epistemically accessible worlds, but in every epistemically accessible world, there's a lot of garlic in the thing that he's cooking.

(15) Indifference:

- a. I grabbed whatever tool was handy (in this case, a hammer).
- b. A hammer was the tool that was handy in w_0 and in a set of worlds differing only in the identity of the handy tool, I grabbed the handy tool (whatever it was) in each world.

FR interpretation crosslinguistically

- ▶ In many languages, free relatives oscillate between definite and “-ever” interpretations (Caponigro 2003); in others (e.g. Russian), they only allow “-ever” interpretations (Grosu 2003).

- (16)
- a. Mila vypolnig čto by ty ne poprosila.
Mila do.fut.3sg what subj you not ask
“Mila will do whatever you ask.”
 - b. Ya kuda xočeš peresjadu.
I where want.2sg change-seat.fut.1sg
“I will sit wherever you want me to.”
 - c. Ya sjadu *(tam) gde vy sjadete.
I sit.fut.1sg there where you.pl sit.fut.2pl
“I will sit (in the precise place) where you sit.”
(Grosu 2003:318–9)

Maximality in correlatives

- ▶ Grosu & Landman claim that restrictions on the correlate in the matrix follow from an analysis of correlatives as maximalizing.

(17) laRke-ko [[jo laRkiyaaN paRh rahii haiN] {ve, dono, boys-dat wh girls read prog are those both sab, #do, #kuch, #adhikam} laRkiyaN] pasand haiN
all two few most girls like are
“{Those, both, all, #two, #few, #most} girls that are reading like the boys”

- ▶ This is important for us: although I'm not going to attempt a definitive analysis of OE correlatives (see below), we can be certain that they are maximalizing, and that this is something which is common to the major candidate analyses.

Appositive relatives

- ▶ Grosu & Landman argue for a “spectrum” of relative clauses w.r.t. the relative contribution of CP-external and CP-internal material.

Simplex XPs – Appositives – Restrictives – Maximalizers – Simplex CPs
1 – 2 – 3 – 4 – 5

- ▶ This is overly complex, though.
 - ▶ Simplex XPs and simplex CPs are not really RCs.
 - ▶ Restrictives and maximalizers are distinguished by a clear binary distinction as above.
 - ▶ So the only thing making this approximate a continuum is the appositives.
- ▶ Grosu & Landman say that “the CP-external material makes the main contribution to the construction”.
- ▶ This is true, but now more likely understood through the role of appositives as conventional implicatures (Potts 2005; for syntactic proposals that are similar in spirit, see Koster 2000, De Vries 2002).

Appositives: Where is NP interpreted?

- ▶ Is N interpreted CP-externally or CP-internally in appositives?
Hard to say.
 - ▶ It's definitely interpreted CP-externally. . .
 - ▶ . . . but also seems to be interpreted CP-internally in some cases.
- ▶ Appositives (e.g. (18)) resist amount readings (the classic CP-internal reading), but that may reflect the fact that the denotation of *the books* is established independently of that of *which are on the table*.

- (18) a. The books, which/?that are on the table
b. *The books, which/that there are on the table

- (19) a. A plumber, who endorses phrenology, came by
b. $\left\langle \begin{array}{l} \{w : g(x) \text{ is a plumber in } w \wedge g(x) \text{ came by in } w\}, \\ \{w : g(x) \text{ endorses phrenology in } w\} \end{array} \right\rangle$

(Potts 2005: 95)

Appositives with two nouns

- ▶ Evidence that N can be interpreted CP-internally comes from cases when a N appears both CP-externally and CP-internally (only in appositives, De Vries 2002).

(20) ?This is a recalcitrant problem in number theory, which problem you would do very well to solve.

- ▶ In earlier English, it was quite common for a different N to appear inside and outside RC.

(21) thilk thing that is doon by *wikkid folk* nys nat doon
for yvel, *the whiche schrewes*, as I have schewed ful
plentyvously, seken good, but wikkid errour
mystorneth hem
“the thing that is done by wicked folk neg.is not done
for evil, which wretches/rogues, as I have showed at
length, seek good, but wicked errors leads them
astray” (CMBOETH,452.C2.496)

More examples

- ▶ You can also find modification within the RC:

(22) than mot he nedes ben moost wrecchide that lengest is a *schrewe*.
The whiche wikkide schrewes wolde I demen althermost unsely and
kaytifs, yif that hir schrewednesse ne were fynissched at the leste
weye by the owtreste deth
“then the one who is most wretched must necessarily be he that is a
rogue for longest. The which wicked rogues I would deem the most
pitiful and miserable, if an end were not finally put to their
roguishness by the ultimate death” (CMBOETH,447.C1.359)

- ▶ Sometimes, you don't even need a nominal antecedent:

(23) þu most haue [gret bysynesse] *to kepe þe chast and clene; þe whic
vertu of chastete maydenly*, alþouȝ it be ornament and flour of
vertues, ȝit witowte meknesse it wext al faad.
“it is important to keep yourself chaste and clean, the which virtue of
chaste virginity, although it is the ornament and flower of virtues, yet
without meekness it withers away” (CMAELR3,32.177)

Why is CP-internal interpretation not more common?

- ▶ Conclusion: appositive RCs allow, at least in principle, for CP-internal *as well as CP-external* interpretation of N.
- ▶ If CP-external interpretation is more common, that probably reflects conditions on discourse anaphora.
- ▶ The link between appositive and antecedent is often considered as discourse anaphoric, and anaphoric relations tend to be of the form more informative – less informative.

- (24) a. That table... It
b. #It... That table

Double interpretation in OE correlatives

- ▶ The same thing seems marginally possible in OE correlatives. Less evidence, but we at least have repeated N:

(25) Swa hwelc mon swa his wiif ... bruceð to streonne,
So which man that his wife X to X
þes mon is his seolfes dome to forlætenne
this man is his self's doom to relinquish
"XX" (cobede, Bede_1:16.82.19.75)

- ▶ We also have what looks like bridging rather than direct resumption.

(26) And to swa hwilcere leode swa we cumað we cunnon
and to so which place that we come we know
ðære gereord
their language
"And wherever we come to, we know their language"
(cocathom2,+ACHom_II,_37:275.103.6195)

Summary

- ▶ A revised typology of relatives:

		RC-external N interpreted?	
		Y	N
RC-internal N interpreted?	Y	Some appositives Some correlatives	Free relatives Internally headed relatives Amount relatives Some correlatives
	N	Restrictives Some appositives	* (full interpretation)

- ▶ English headed *wh*-relatives emerged following a spread from the top right (correlatives and free relatives) via the top left (appositives) to the bottom left (restrictive embedded relatives).
- ▶ This is a variant on the old “adjoined → embedded” story (e.g. Haudry 1973), but articulates better with current theory and clearer (and more accurate) predictions about the pathway followed.

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