Matching relatives in Middle English

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The idea

- Various analyses of externally headed relative clauses postulate a copy of the head inside the relative, often related to the external head by movement.

- The evidence for this copy is typically indirect, based on interpretive phenomena.

- Middle English *which*-relatives often had an overt internal copy of the head inside the relative (overtly matching relatives).

- We can learn about interpretation of copies by examining those examples.

- Interpretive properties of overtly matching relatives suggest that the simplest copy-based analyses of externally headed relatives cannot capture general properties of these constructions.

- This doesn't tell us how we should analyse externally headed relatives, but it sharpens the set of alternatives.

Roadmap

1. Analyses of relative clauses
2. *Wh*-forms in early English
3. Nonrestrictiveness of overtly matching relatives
4. Discussion

Section 1

Analyses of relative clauses

Back in the day

- Movement used to be so simple.
  - it leaves a gap
  - where there is a bridge, there is an apparent violation of subjacency, PIC, and SSC
  - it observes CNPC
  - it observes *wh*-island constraints   (Chomsky 1977: 86)
- That didn't last long.
- Lots of candidates for other clusters of properties to characterize movement (or functional equivalents).
- No real consensus on which phenomena reflect movement.

Prototypical movement and reconstruction

- ▶ Approximate current consensus among Minimalists:
  - ▶ Prototypical movement targets some major category (e.g. a phase), or else (less prototypically) a head.
  - ▶ It typically leaves a gap (less prototypical alternatives: covert movement, resumption, etc.).
  - ▶ It typically obeys locality constraints (except when that's analytically inconvenient).
  - ▶ Wherever there's reconstruction, prototypically there's movement.
- ▶ The last point is formally different: it's a diagnosis of movement ($P \rightarrow$ movement), not a constraint on movement (movement $\rightarrow P$).
  - ▶ Lots of other operations target major categories.
  - ▶ Lots of other types of gap (or empty element).
  - ▶ Lots of other more-or-less local operations.

Relative clauses and almost-prototypical movement

- Externally headed relative clauses look like (1).

    (1)   The **house** [that Jack built ___]

- They have:
    - An **antecedent** which is not the kind of thing that typically moves (N′/NP not NP/DP);
    - A gap (___), at least typically.
    - A local relationship between antecedent and the gap.
    - Reconstruction for almost a full set of reconstructible properties.

    (2)   a.   The headway that we made.
           b.   The pictures of each other that the children took.
           c.   The picture of John that he likes best.

- Is the antecedent related to the gap by movement? The evidence (in the above terms) is irreducibly equivocal.

Three analyses of relative clauses

(3)   The **house** [*Op* that Jack built *Op*]

- ▶ Captures the fact that moving *house* is weird.
- ▶ Captures locality (movement internal to RC).
- ▶ Doesn't straightforwardly capture reconstruction effects.

Three analyses of relative clauses
2: The raising analysis

(4)   The **house** [[(*Op*) house] that Jack built [(*Op*) house]]

- ▶ Captures reconstruction effects.
- ▶ Captures locality.
- ▶ Involves weird movement of *house*.
- ▶ May predict too many reconstruction effects without fancy footwork.

Three analyses of relative clauses

(5)   The **house** [[*Op* ~~house~~] that Jack built [*Op* ~~house~~]]

- ► Has the best of both worlds.
- ► Captures reconstruction effects (possibly still requiring fancy footwork).
- ► Captures locality.
- ► No movement of N′.

Three analyses of relative clauses

Which is your favourite?

- ▶ Widespread conviction that there are multiple analyses of superficially similar relative clauses.
    - ▶ Carlson (1977): amount relatives involve raising, restrictive relatives don't.
    - ▶ Hulsey & Sauerland (2006): extraposed relatives are matching, *in situ* relatives can be raising.
- ▶ Little consensus on which structures underpin which examples.
- ▶ If you believe that reconstruction requires a copy of the reconstructed material in the interpretation site, the operator analysis is a nonstarter.
- ▶ Carlson makes different use of RC-internal material.

    (6)   a.   *There was every man/him/that in the laundromat.
          b.   Every man that there was [THAT AMOUNT men] in the laundromat.
          c.   There were [that many men] in the laundromat.

Today

- Research into the constitution of the gap site is hampered by the fact that you can't hear what's in there.
- I'm going to look at examples in early English (c.1000–1600) where you can hear that there's a N′ inside the relative clause: relativizers of the form *which house* rather than plain *which*.
- The interpretation of these examples can be as free or nonrestrictive relatives, but never as restrictive relatives.
- That's at least a preliminary argument that we shouldn't give up on the operator analysis so quickly.

Section 2

Wh-forms in early English

Old English (–1150)

- OE headed relatives could contain:
    - A complementizer *þe*;
    - A specifier (demonstrative phrase);
    - Both;
    - Neither

    (7)   a.   he is ure lif [on þam we lybbað &   styriað __]
               he is our life in   DEM we live   and move
               "He is our life, in whom we live and move"
          b.   ic [ðe __ to eow sprece]
               I   that   to you speak
               "I, that speaks to you"(both Ælfric homilies, c.990)

- OE *wh*-forms could function as:
    - Interrogative markers;
    - Indefinites ($\approx$ NPIs);
    - Free relative markers (not headed relatives).

Old English free relatives
Truswell & Gisborne (2015)

- OE free relatives occurred:
    - clause-peripherally (initially/finally).
    - With or without surrounding *swa ... swa*.

(8) a. Soðlice [swa hwar swa Israhela bearn wæron], þar wæs
         Truly so where so Israel's children were, there was
         leoht.
         light
         'all the children of Israel had light in their dwellings.'
         (cootest,Exod:10.23.2788)
     b. Gemyne, [hwæt Sanctus Paulus cwæð]
         Remember what Saint Paul said
         'Remember what Saint Paul said.'
         (cogregdC,GDPref_and_3_[C]:15.207.28.2739)

- OE free relatives are always definite (cf. Jacobson 1995).
- *Swa ... swa* ≈ *-ever*: marker of ignorance or indifference (von Fintel 2000).
- *Swa ... swa* obligatory clause-initially; optional clause-finally.

Free relatives and maximization

- ▶ Free relatives have an internal head N′ (if they have a head noun at all).

- ▶ They are also maximizing (more specifically definite).

  (9)   I read what she read $\neq$ I read some of the things that she read.

- ▶ Grosu & Landman (1998) claim this isn't a coincidence: maximizing relative constructions (amount relatives, correlatives, free relatives, some internally-headed relatives) have the head N′ interpreted within the relative, regardless of where it's pronounced.

- ▶ OE can form free relatives with *hwylc* ($>$ *which*) and *hwæt* ($>$ *what*).

- ▶ *Hwæt* never has a head N′, *hwylc* optionally does.

Free *wh*-relatives > headed *wh*-relatives

- Early Middle English: erosion of OE system.
- *swa ... swa* > *se* (> *(so)ever*).
- *What* starts occurring with N′.
- *Which* N′ almost never occurs with *se* (2/14 tokens); *what* N′ almost always does (11/15 tokens).

   (10)   a.   [Context: the journey from heaven to hell and back]
                wiche strides he makede dunward. and eft uppard
                which strides he made downwards, and
                afterwards upwards (CMTRINIT-MX1,111.1511)

            b.   teȝȝ ... follȝhenn ure Laferrd Crist Whatt gate summ he ganngeþþ
                they follow our Lord Christ what way SE he goes
                (CMORM-M1,I,285.2358)

Free *wh*-relatives > headed *wh*-relatives

- *Which* is specializing for regular, 'definite' interpretations, which overlap significantly with nonrestrictive headed relative interpretations (e.g. De Vries 2006)

- *What* is specializing for 'ignorance and indifference' interpretations, which are specifically free relative.

- The interpretive overlap makes reanalysis of *which* as headed relativizer more plausible.

  (11) a. ... NP_i ... FR_i
        b. ... $[_{NP}$ ... $t_i]$ ... RC_i

- Because of significant similarities between appositive free relatives and nonrestrictive headed relatives, no clear date for emergence of headed *which*-relatives.

- Usual consensus: mid-14th century.

Section 3

Nonrestrictiveness of *which N′* relatives
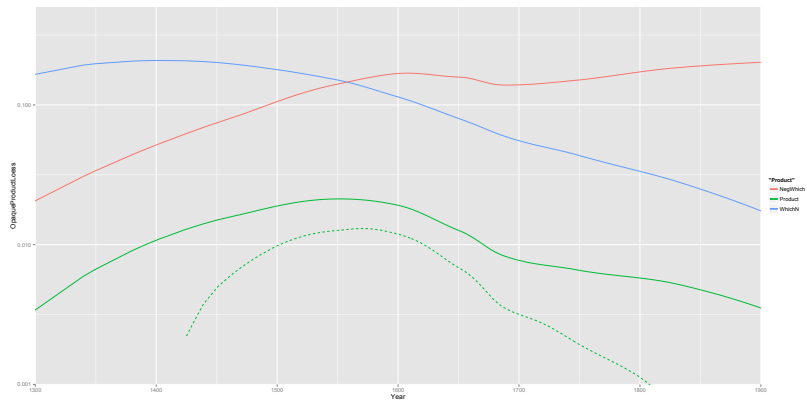
Properties of early headed *which* relatives

- Early headed *which*-relatives are clause-final.
- They often have an internal N′ head.
- They are usually nonrestrictive: very few *which*-relatives modifying opacity-inducing quantifiers (*no, few, little, every*, but cf. *all*).

(12)   a.   he is emperour of him-zelue. þet is of his bodye: and of
            he is emperor   of himself   that is of his body   and of
            his herte. [huiche he demþ and halt ine guode payse]
            his heart which   he deems and holds in good weight
            huerof he deþ his wyl.
            whereof he does his will

                                      (cmayenbi-M2,85.1658, 1340)

       b.   and for no richesse ye shullen do no thyng [which may in
            and for no riches   you shall   do no thing which may in
            any manere displese God]
            any manner displease God

                                      (cmctmeli-m3,234.C1.665)

Which N′ relatives are nonrestrictive

- No examples of a *Which N′*-relative modifying an opacity-inducing quantifier (not even *all*).
- How surprising is this?
  - 4,691 NPs with opacity-inducing quantifiers + RCs, of which 588 have *which* (12.5%).
  - 19,250 *which*-relatives, of which *1,672* have *which N′* (8.7%).
  - If the two properties were independent, you might expect roughly $588 \times 0.087 = 51$ hits.
- A slightly fancier version of the same estimates the frequency year-by-year, calculates an expected value for each text, and sums them. Expected: 50 hits. $p = 0.05$ threshold value: 21 hits.
- So 0 hits is very surprising.

Expected *which N′* with opacity-inducing antecedent

Nonrestrictiveness is independent of choice of N′

- The N′ inside the relative could be identical to the antecedent (overtly matching relatives).

  (13) the bifore knowing of God, which bifore knowing of God
        bihooldith so without fayling thingis to comynge
        'the foresight of God, which foresight of God beholds so
        infallibly things to come'   (cmpurvey-m3,I,55.2216)

- Or it could be different, standing in a variety of discourse relations to the antecedent (nonmatching relatives).
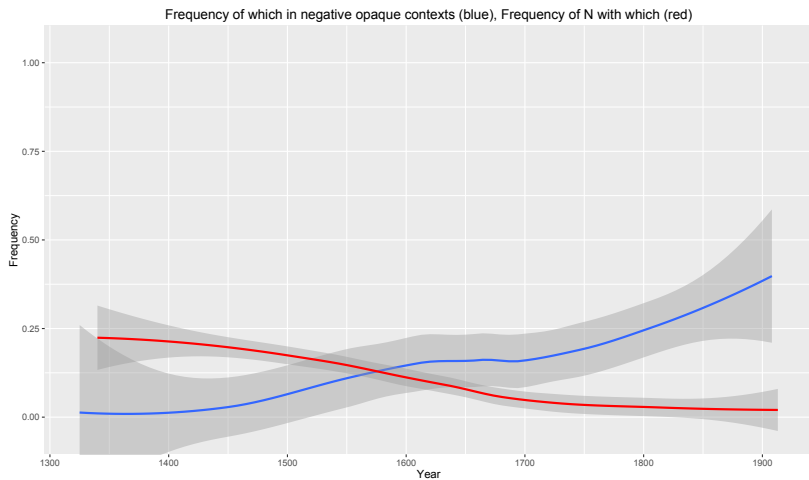
  (14) Asa, kyng of Juda, ... had sore feet, whech passioun oure
        bokys sey it was podegra
        'Asa, king of Judea, had sore feet, which suffering our books say
        was gout'   (cmcapchr-m4,33.43)

- Initially, almost all *which N′* relatives were overtly matching relatives.
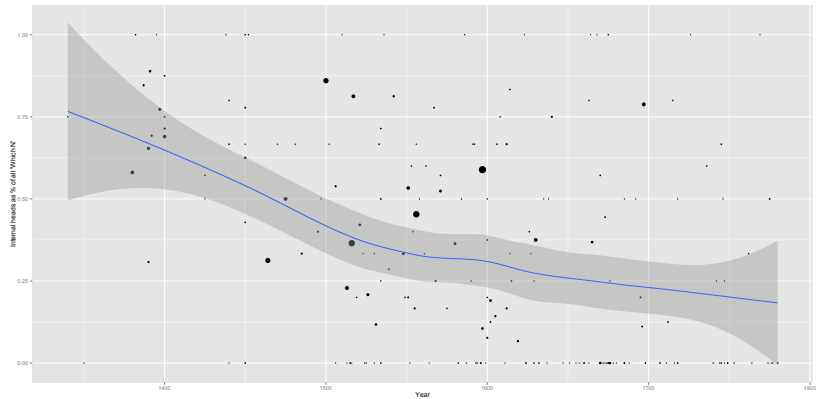
- But both kinds are still categorically nonrestrictive.

The grammar of *which* changes; the N′ restriction doesn't

- *Which* N′ declines over time, frequency of *which* with opaque antecedents increases in lockstep.
- Among *which* N′ relatives, overtly matching relatives decline while nonmatching relatives become the norm.
- We even see a significant by-text correlation between frequency of overtly matching *which* N′-relatives and frequency of *which* modifying opaque antecedents.
- No significant correlation with frequency of nonmatching *which* N′-relatives.
- All of this suggests significant changes c.1350–1800 in the grammar of *which*.
- But no matter what a speaker's grammatical representation of *which* was, that grammar didn't permit restrictive *which* N-relatives.
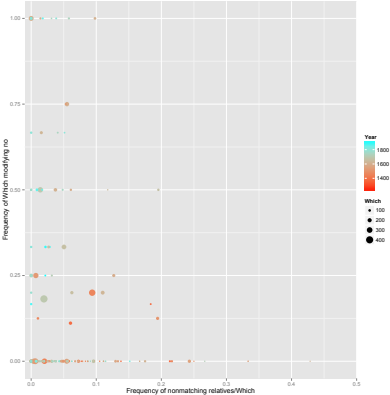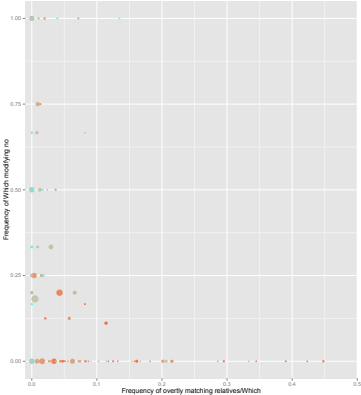
Nonrestrictiveness and *which N'*

Frequency of which in negative opaque contexts (blue), Frequency of N with which (red)

Diachrony of overtly matching relatives

Matching and restrictiveness

Overtly matching relatives: Summary

- Early headed *which*-relatives often had N′ following *which*.
- The N′ initially typically matched the N′ of the antecedent: overtly matching relatives.
- Later, nonmatching relatives with different N′s became more common.
- This change suggests multiple (competing?) specification of the grammatical behaviour of *which* in the population.
- First-pass generalization: Texts with high frequencies of overtly matching *which* N′-relatives have low frequencies of clearly restrictive *which*-relatives, and *vice versa*.
- No evidence that any grammar allowed restrictive *which* N′-relatives.

Section 4

Discussion

Nonrestrictiveness makes sense

- ▶ Sells (1985): nonrestrictive relatives are discourse anaphors
  - ▶ Explains prohibition against antecedents in opaque environments.
- ▶ Evans (1980), Heim (1990), Elbourne (2001): discourse anaphors are covert definite descriptions.

  (15) a. John has a wife. She is sitting next to him.
        b. John is married. ??She is sitting next to him.
            (Heim 1990: 166)

  (16) X S Y NP$_i$ Z $\Rightarrow$ 1 2 3 4 + 2 5   (Heim 1990: 170)
        1 2 3 4 5
        conditions: 4 is a pronoun
                    2 is of the form [$_S$ NP$_i$ S]
                                        6   7

- ▶ Elbourne (2001) recasts NP-copying as NP/N′-deletion.
- ▶ Overtly matching relatives show what happens without deletion.

Restrictiveness makes less sense

- ▶ Hard to see that a copy of N′ inside the relative clause does any harm.

- ▶ But, reconstruction aside, it's redundant.

    (17)   a.   There are no books which (books) you can read.
                b. $\neg\exists x.\text{book}'(x) \land \text{book}'(x) \land$ you can read x

- ▶ We can't easily assess patterns of reconstruction in a dead language.

- ▶ So we reach a stand-off:
  - ▶ early English says restrictive relatives can't have N′ copied inside them.
  - ▶ many analyses of reconstruction in contemporary English disagree.

Relatives: What reconstructs? What doesn't?

- Roughly speaking, dependent elements reconstruct into relative clauses.

  (18) a. The headway that we made
        b. The pictures of each other that the children took

- No reconstruction for obviative phenomena (esp. Condition C).

  (19) The picture of John that he likes.

- The usual strategy has been to assume that real reconstruction patterns are revealed by the dependent elements, and something else ('vehicle change') accounts for the evanescence of obviative reconstruction patterns.

Searching for the third way

- Keeping the copy-based approach to reconstruction and 'no N′ inside restrictive relatives' would require something more subtle than just reconstructing N′.

- Something that would work is reconstructing the dependent elements of N′ rather than the whole constituent ($\approx$ 'scattered deletion', 'minimize reconstruction').

- This sounds like a conflict with the 'Maximize Reconstruction' paradigm in Chomsky (1993).

    (20)   a. John_i wondered which picture of $\text{himself}_{i/j}$ Bill_j saw

                b. John_i wondered which picture of Tom_j $\text{he}_{i/*j}$ liked

                c. John_i wondered which picture of $\text{him}_{i/*j}$ Bill took (Chomsky 1993)

Searching for the third way

- An alternative, along the lines I defended at UCL last year, seems equally viable:
  - Reconstruction depends on chains rather than copies.
  - So no argument from reconstruction for N′ inside externally headed relatives.
  - Rather, the distributions of different types of reconstruction effect depend on different types of chain, which co-occur in movement relations but can be dissociated.
- The problem is that other dependencies with reconstruction don't show quite this pattern:
  - Obligatory Control: Scope reconstruction, no binding reconstruction.
  - Specificational sentences: Binding reconstruction (including Condition C), no scope reconstruction.
  - Prototypical movement (e.g. *wh*-questions): everything.
  - Externally headed relatives: Everything except Condition C.
- So we can choose where to put the mess.

Summary

- Middle English has a class of *which N′* relatives that look like overt versions of proposed matching structures for externally headed relatives.
- Those overtly matching relatives are all nonrestrictive.
- Theories of the semantics of discourse anaphors suggest that this connection is not accidental.
- So simple theories of reconstruction which rely on internal copies of external heads will not be appropriate in the general case.
- And we can decide whether we want to investigate more complex copy-theoretic treatments of reconstruction or more complex chain-based treatments of reconstruction to account for that mess.

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