

Supplemental relative clauses and syntactic generality

(or: A niche of left-adjunction productivity:
rethinking parenthetical *as*)

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1 Goals of this talk

1. Understand why two very similar constructions—supplemental *as* and supplemental *which*—have rather different distributions

To do this we will have to:

2. Have a syntactic analysis of *as* (and *which*).
3. Explore the possibility for left-adjunction of relative clauses and other parenthetical material in English.

2 Supplemental *as*—a relativizer

- The use of *as* illustrated in (1-3)¹ has been called by Potts (2002a, 2002b) *parenthetical-as*, and by Pullum and Huddleston (2002:ch.13; below, CGEL) the *adjunct of comparison* (p. 1146).
- Because they are also *supplemental* (CGEL, ch.15; aka “non-restrictive”) I will call them supplemental *as*-clauses.

- (1)
 - a. Secondly [as most reviewers say __], at the end of the book we still don’t fully understand where Bush is coming from.
 - b. I mean they set up their own photo opportunities at every opportunity, [as we all know __].
- (2)
 - a. The next day, although I sprayed the pests, [as I knew I must __], I stood at arm’s length from the compost heap and wore jeans and high-rise trainers.
 - b. Mrs Thatcher expressed confidence that she would win and declared again, [as she had __ at the outset], that even if she did not win outright she would continue to a second ballot. . . .
- (3)
 - a. The fashionable dress varies, [as do __ the fashionable drugs], but there are always at least two problems for society to deal with.

¹Unless otherwise noted, sentences are from the British National Corpus.

- b. Those with assets exceeding £500,000 can also apply, [as can __ businessmen willing to invest over £150,000 and create new employment].

These *as*-clauses are characterized syntactically and semantically by:

- A clause with a clausal or predicative gap, semantically identified with some part of the main clause.
- Flexible position within the main clause.

And pragmatically by:

- Presenting a declaration separate from (though dependent on) that of the main clause (a conventional implicature in Potts’s (2005) framework).
- Presenting that information as backgrounded.

2.1 Long-distance dependency

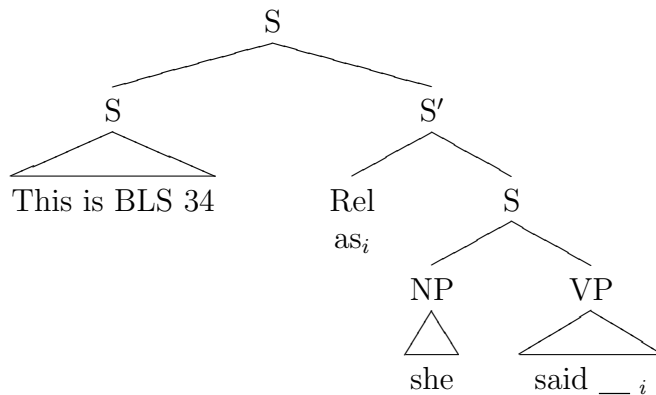
In their internal syntax, *as*-clauses are nearly indistinguishable from canonical relative clauses. (Potts, 2002a, 2002b).

- A “function” word appears initially.
- The clause has a gap.
- The gap in the *as*-clause cannot appear within syntactic islands (relative clauses, complex noun phrases, adjuncts, etc). See (4), from (Potts, 2002b:631–2).

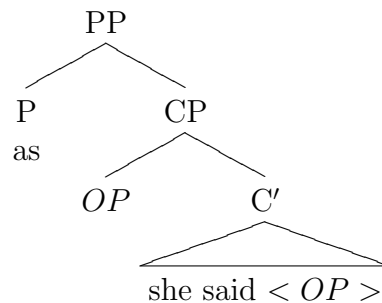
- (4) a. *Nina quickly bought two durians, exactly [as we met a chef [*rel-cl* who did __]].
 b. *Eddie fills his truck with leaded gas, just [as they believed [*DP* the report that he must __]].
 c. *Jim Durrow counts cards, just [as the owners arrested Sammie [*adjunct* when he did __]].

- This is completely compatible with a relativizer analysis, illustrated in (5a).
- Potts (2002a, 2002b) presents an analysis in which *as* is a clause-selecting preposition. The clause obligatorily contains a null operator which moves to Spec-CP just under the *as*: (5b).

(5) a.



b.



- Internal syntax does not distinguish the two.
- Both Potts (2002b) and the CGEL point out environments where *as* and *which* (surely a relative pronoun) are not interchangeable. But both argue that this is due to a semantic or pragmatic difference between the two clauses, not any syntactic difference.

(Non-)arguments against a relativizer analysis (Potts, 2002b):

1. *As* never appears post-verbally (**...she said as*), even though *so*, another predicate/sentential anaphor, can (*so she said/she said so*). If both are anaphors, we expect similar syntactic possibilities; if we see different syntactic possibilities, we infer different semantic properties.
- ↔ If *as* is a relativizer (while *so* is not), it should never appear post-verbally, regardless its semantic properties: **My friend, I met in high school who, ...*
2. The analogous word in Thai, *yaaj*, is (derived from) a *wh*-word ‘how’. But if it is a relativizer, this would mean overt *wh*-movement in an otherwise *wh*-in-situ language.
- ↔ Even a prepositional analysis requires positing overt movement—of a phonologically null element.

2.2 An argument from partial anaphora

- The exact semantic interpretation of the gap may not correspond to a syntactic constituent in the main clause (6–7).²
- If *as* is explicitly anaphoric, and picks up its meaning from semantic, not syntactic, structures, we get a handle on how it finds its antecedent.
- In fact, this exact sort of partial anaphora is seen in *one*-replacement, *the same thing*, etc.
- This also motivates a single lexical item to cover both predicate and clausal antecedents (Lee-Goldman, 2007)—“verbal-*as*”, as opposed to Potts’s (2002b) CP-*as* and Predicate-*as*.
- Note that supplemental-*which* has exactly the same property.

In (6–7), the maximal possible antecedent to *as* is italicized. Underlined material in the main clause is not interpreted as being part of what fills the gap in the *as*-clause, having been replaced by underlined material in the subordinate clause.

- (6) a. The secret police will doubtless try to make sure *there are no demonstrators chanting in the streets on Saturday*, [as thousands did in Leipzig on Monday night].
- b. Or perhaps *she got the name of the Chinese American Citizens Alliance close but not quite right*, [as she had with the Arizona Historical Society’s library]?
- c. In the end, I decided to watch it, so I could again serve the public by telling them about another B movie person to avoid ([which I did earlier with Albert Pyun in my review of Omega Doom].)³
- (7) a. Yet, [just as Bruno claimed for an infinite universe], *this finite model has “no center nor edge”*.
- b. I suppose we’ll never know whether *Bush [...] associates this construction [noo-kyoo-lar] with folksy, hypermasculine speech* ([as Arnold Zwicky suggests for some other features [of his speech, i.e., is-is]]).
- c. Neither can it be reasonably said that *North Korea is a threat to US security* [as was claimed for Saddam Hussein’s Iraq before 2003].
- d. Now, [just as is claimed for the case of colour], it may seem that *the experience of musical harmonies must reveal something about their “intrinsic nature”*.
- e. As a matter of fact, Müller claimed that *Burke was more German than he was English*—[which he also claimed for Shakespeare].⁴
- I will proceed assuming a relative clause analysis, based on evidence from internal syntax and from partial semantic anaphora.

²Sentences are from internet search results

³<http://www.badmovieplanet.com/unknownmovies/reviews/rev169.html>

⁴<http://mars.wnec.edu/grempel/courses/germany/lectures/07reform.html>

- A question remains: what of its external distribution?

2.3 A troubling mystery

- The distribution of supplemental *as*-clauses is unexpected, given that their internal syntax (not to mention semantics) indicates that they are relative clauses.
- (8)
- Article 118/3 of the social chapter opens the way, [as the Prime Minister said], to European-wide collective bargaining.
 - To suggest, [as I do], that he is the greatest living painter is to remind a contemporary audience that, after all, permanence, grandeur, deliberation, lucidity and calm are paramount virtues of the art of painting. . . .
- English relative clauses appear (almost) exclusively after the material they modify.
 - Supplemental *as*-clauses exhibit syntactic niching (Ross, 1984), i.e., they have the distribution of parenthetical sentential adverbials: *Our project turned out to be, {unfortunately, to my disappointment, if I may say so, not to be too harsh}, a complete failure.*
 - There seem to be conflicting motivations: can the syntactic type of the modified head determine external syntax of the modifier? Or is the relativization analysis misguided?

3 Left-adjointed relative clauses

3.1 *Which*

- In fact, the free distribution of supplemental *as*-clauses is not what is to be explained.
 - The rather narrow distribution of supplemental *which* is what requires specification.
- (9)
- He wondered whether I would give a dinner, [which I said I would], at my home.
 - These timings will hold so long as wait times exceed processing times, [which is often true].
 - But, when we think of him today, [which I can assure you we do], we think of those left behind.
 - It was published in eighty six eighty seven, although it's no longer available in shops, it can still be obtained through the library service if you care to request it, [which I have].
 - The piano is from the Garritan Personal Orchestra, [which I discovered when we interviewed Gary Garritan].⁵

⁵<http://digitalmedia.oreilly.com/2007/06/15/digital-media-insider-podcast-14-doug-wyatt.html>

- f. The people didnt show up, [which of course I knew because I never saw anyone drive up].⁶
- *Which* can relativize on predicates and propositions—i.e., it is a sentential modifier, like *as*.
 - But it can normally only appear after the modified sentence. For a relative clause, this is expected—but for a sentential modifier, it is unusual.
 - It should thus not come as much of a surprise when we see that, in some cases, *which*-supplements appear in places where only a sentential modifier could.
 - The CGEL notes that “[a] supplementary relative with a coordinated clause as antecedent can precede it, following the coordinator” (p. 1066).
- (10) a. The arc of this circle intercepted between the star and the ecliptic, **or**, [which is the same thing], the complement of the star’s distance from the pole of the ecliptic, is called the *Latitude* of the star...⁷
- b. Having argued this far Lorentz has to go all the way and he was forced to conclude that there will be no American M until Hollywood goes and until “independent companies allow their directors to do away entirely with actors, **and** [(which is the only sensible way to manufacture movies at all)] pick types and faces off the streets”.
- c. Their apparently similar, sharply segmented body plan either arose more than once **or**—[which is also more than possible]—it is very primitive...⁸
- d. Nevertheless, it is now clear, as I hope to show, that the two opposite types of symptom do in fact appear in connection with the coming of agriculture **and**, [which is more to the point for our present concerns], that this is a phenomenon not without relevance to the understanding of the modern world.
- e. In the early 1970s, in the heyday of abstract philosophy of education, it was commonplace to draw a distinction between education “in the true sense” and pseudo-education; **or**, [which came to the same thing], between education and training.
- f. Either they were performing this public duty in giving the protection asked for, in which case I think they cannot charge, **or**, [which no one suggests], they were at the request of an individual doing something which it was not their duty to do, in which case it seems to me both public policy and section 10 of the County Police Act 1839, make the contract illegal and void.
- g. Now it seems that [(which I know from experience)] when ‘the crash’ begins within 2 hours, this is when the plasma concentration methylphenidate reaches

⁶<http://www.phoneboy.com/1563/my-work-day-on-tuesday>

⁷Proctor, R. A. 1888. “Astronomy.” In Thomas Spencer Baynes (ed.) *The Encyclopaedia Britannica*. New York: Henry G. Allen and Company Publishers, p. 771

⁸Tudge, Colin. 2002. *The Variety of Life*. Oxford: Oxford University Press, p. 200.

its peak (C_{max}), the methylphenidate [molecules] seem to get transported with the plasma (blood), reaching the liver where it could be metabolised.⁹

Left-adjoined supplemental *which*-clauses tend to do the work of introducing a proposition which is alternative or additional to another one. This means that:

- Supplemental *which* must appear following a conjunction (one exception found so far).
- The relative clause is often a predicational copular construction.

No such restrictions hold for other sentential modifiers (including supplemental *as*).

3.2 *What*

- The idiomatic phrase *what's more* has the appearance of a relative clause.
 - It is in fact the central/prototypical variety of a family of *what be AP* constructions.
- (11) a. [What's more], at the end of the year we'll be choosing the best tip of all, and the gardening genius who dreamt it up will win a fantastic holiday for two—with spending money—in exotic Thailand.
- b. In other words, at these two points the crystal is pretty well broken away. [What is even more important], the dislocation turns out to be movable.
- c. When the probabilities get very small, as they do with some of the school types, *d* is not a very suitable measure of effect. Any measure based on ratios (or, [what amounts to the same thing], differences in logs) is to be preferred.
- d. How had that fancily-named high-hab brat come to be here at the garrison block? [Mingling, [what's more], with Dorcas gang members, or so it seemed?
- In the form *what's more*, supplemental-*what* is the most distributionally-flexible in the family (11d).

3.3 *Name-as*

- One might object: why go to all this trouble? Simply call *as* a non-relativizing correlative or comparative marker, and chalk the differences in distribution up to that.
- This is done in the CGEL: the distributional difference between *as* and *which* is “attributable to the fact that the *as* here is itself the comparative governor, rather than being selected by some superordinate governor that it must follow” (p.1147).
- This section will show that another supplemental use of *as* is much more limited in its external distribution

⁹<http://mb.rxlist.com/rxboard/ritalin.pl?noframes;read=526>

- (12) a. In other words, unless Ralph Nader builds that mass movement pretty quick, thereby breaking the two-party duopoly [as he calls it __], look out America – more beer riots are on the way!
- b. They were “switched,” [as dealership salespeople refer to it __].
- c. The kha-nyou, [as it is known __ locally], was trapped by an expedition in May.
- d. But even among the most ardent supporters of “Jessi,” [as she is known __ in town], there is an unsettling sense that
- This *as* relativizes on “names” (arguments of *refer*, *call*, *know* (*as*), etc.).
 - One might expect it to have a adverbial-like distribution similar to the other supplemental *as* constructions (per the CGEL analysis of the “adjunct of comparison”)
 - But it does not. It nearly always appears directly after the name it modifies, or before if preceded by a conjunction. It very rarely appears before the name without a conjunction: *This is the account I attribute to, as I call him, ‘Sartre-Two’, and to which I now turn.*¹⁰. Other locations are impossible: **Trish has been working too hard, as I call her for short.*
 - This can be chalked up to a difference in modification structure—name-*as* is not a sentential modifier, and so it cannot be placed just anywhere in the sentence.
 - This is further evidence that, in the domain of relative clauses, the syntactic type of the modified head determines, or at least influences, the details of linearization and adjacency.

4 Finding your niche

Table 1 shows each of the constructions examined, along with whether or not they can appear following the modified material (post-head), preceding it (pre-head), whether it can be niched into a variety of locations (niching), and if it can or must follow a conjunction. We observe that:

- Supplemental-*as* acts exactly as a sentential modifier should
- Supplemental-*which* has an intermediate distribution. It has the properties of a “canonical” (adnominal) relative clause, but can also be placed pre-head, with the caveat that it must follow a conjunction.
- Supplemental-*what* is much closer to *as*, and in the form *what’s more*, is nearly exactly like *as*.

What sense are we to make of this?

¹⁰Young, Julian. 2003. *The Death of God and the Meaning of Life* London and New York: Routledge, p. 142

clause-type	canonical sentential modifier			cxn-al constraint
	“canonical” rel-cl			
	post-head	pre-head	niching	follows conj.
verbal-as	✓	✓	✓	flexible
which	✓	Δ^a	✗	always
what	✓	✓	Δ^b	flexible
name-as	✓	Δ^c	✗	flexible
adnominal	✓	✗	✗	never

^aOnly following a conjunction

^bIndicates marginal acceptability

^cOften following a conjunction

Table 1: Properties of the constructions examined.

- In earlier work (Lee-Goldman & Ellsworth, 2007) I argued that *as* must be a correlative relative marker, due to its unexpectedly flexible distribution. But this assumes that all (non-correlative) relative clauses should act like adnominal ones.
- There may instead be separate constraints on sentential relativizers, i.e., that they act like other sentential modifiers. This explains the niching properties of *as*.
- Then it is *which* that must be explained. It is a sentential modifier—but it is also historically *adnominal*. In fact in some cases it is desirable to call supplemental-*which* a nominal modifier which coerces the anteceded clause into a pseudo-nominal. This supports Potts’s (2002a) analysis of *which* as at some level adnominal—though for completely different reasons.
- It can escape the distributional clutches of its adnominal-relative past in a very particular, construction-specific environment. That environment provides what we might call a “doorway to productivity” (cf “niche of productivity,” discussed in the appendix).
- Supplemental-*what*, far more idiomatic (and with a very limited adnominal use in standard varieties), is more like *as* than like *which*.

Significantly: for relative clauses, possible positions within the sentence are mediated by details of the properties of the modified head, and not entirely determined by syntactic type of the modifier.

5 Final thoughts

The main points covered:

- Supplemental verbal-*as* is best analyzed as a relativizer.
- The distribution of relative clauses is not determined so much by the syntactic category of the relativizer, but that of the modified head.

- There is a variety of levels of generalization and productivity with respect to a single principle, i.e., syntactic placement of adverbials.

A Other parallels to relative clauses

Arnold (2004) presents a number of arguments that non-restrictive (supplemental) relative clauses (NRCs) are syntactically parallel to their restrictive counterparts:

- NRCs form a constituent with their antecedent
- NRCs can be stacked and extraposed
- NRCs attach inside possessive 's
- NRCs act parallel to restrictive relative clauses with respect to constraints on antecedent-anaphor relations (namely, that an antecedent may not both precede and command the antecedent).
- NRCs pattern with restrictive relatives in providing antecedents for predicate ellipsis, and participating in right-node raising.

Many of these tests cannot be tested with sentential relative clauses, as the head (i.e., the sentence) is not subject to operations like topicalization, extraposition, and possessive constructions. Some tests may be considered (judgements are withheld; sentences are constructed): stacking (13), antecedent-anaphor c-command relations (14), and right-node raising (15)

- (13) He truly believes, as I do, as we all do, that our first responsibility is our family.
- (14) a. People were indeed, as I warned him it would do, sickened by (the camera-work in) Cloverfield.
 b. People were indeed, as I warned him Cloverfield would do, sickened by (the camera-work in) it.
 c. It did indeed, as I warned him (the camera-work in) Cloverfield would do, sicken people.
 d. The bully will, as I already told your daughter, be asked to apologize to her in public.
 e. The bully will, as I already told her, be asked to apologize to your daughter in public.
- (15) a. The project budget ballooned, as is usually, and the goals changed, as is always, the case when you try to please everyone.
 b. The project budget ballooned, as Smith first claimed, and its goals changed, as Jones predicted, in (two separate) articles in the Times.
 c. First he fired an entire division, which I said should, and (then) he hired all his friends, which I said must, be opposed by all of us

- These tests are, it would seem, inconclusive, but certainly not damning for a relativizer analysis.
- They also assume that sentential relative clauses should act like adnominal relatives with respect to these tests.

B Niches in morphology

Consider the distribution of supplemental *which*-clauses, where a slightly more flexible distribution pattern is available only in a very specific syntactic/pragmatic environment. Do we see anything similar in other parts of the grammar?

- One well-known issue in morphology concerns the productivity of derivational processes. A morphological process may be rather limited in general, but be extremely productive in a particular morphological environment.
- Noun-to-verb derivation by stress shift can apply to nearly any disyllabic word with the *re-* ‘again’ prefix. Marchand (1969) notes that “Of prefixal types only verbs with **inter-**, **mis-** and **re-** have developed stress-distinguished substantives” (see also Orgun, 1996 and Orgun & Inkelas, 2001).
- Several suffixes welcome further suffixes: “All adjectives in *-al*, *-an* (*-ian*), *-ar*, *-ic* are verbalized by means of **-ize**” (Marchand, 1969:320).

This has been called a *niche of productivity*. What we are faced with with supplemental relative clauses is different, however:

- Sentential modifiers are expected to be subject to general syntactic constraints, e.g., being a constituent in a niching construction.
- But supplemental-*which* must be stipulated as excluded from this process.
- ...except when certain other syntactic/semantic constraints are met (following a conjunction, presenting an alternate conception or situation).

Extending the concept of niche of productivity from the morphology to the syntax would only be relevant in this case if limited to *within the domain of which-clause supplements*. That is, the construction that allows sentential adverbials to niche is unproductive generally *for which-relatives*, but finds a niche of productivity when a particular condition is satisfied (following a conjunction, etc.).

Alternatively, one might say the special environment is a “doorway to productivity”: it lets *which* act more like one might expect it to, if the constraint on sentential modifiers were truly productive in all cases.

Such cases as these should be further examined in the light of models of grammar such as that in Riehemann, 2001, which attempt to account for both syntactic and morphological productivity under the rubric of constructional hierarchies.

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