

# Backward... ellipsis?

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## 1 The issues

### 1.1 Basic data

We've known for a long time that backward ellipsis is much more restricted than forward ellipsis (elided material is represented in a light gray font).

(1) *NP ellipsis*

- a. Bill Gates's fortune surpasses Donald Trump's [\_\_\_].
- b. \* Bill Gates's [\_\_\_] surpasses Donald Trump's fortune.

(2) *VP ellipsis*

- a. I didn't drink wine because Steve told me not to [\_\_\_].
- b. \* I didn't [\_\_\_] because Steve told me not to drink wine.

(3) *Sluicing (TP ellipsis)*

- a. I know that Andrea is dating someone, although I don't know who [\_\_\_].
- b. \* I don't know who [\_\_\_], although I know that Andrea is dating someone.

However, backward ellipsis becomes possible if the pre-antecedent position of the ellipsis site is derived by movement.

- (4) a. [Surpass Donald Trump's [\_\_\_]], Bill Gates's fortune certainly does.  
[*NP ellipsis – compare to (1)*]
- b. [Because Steve told me not to [\_\_\_]], I didn't drink wine.  
[*VP ellipsis – compare to (2)*]
- c. [Although I don't know who [\_\_\_]], I know that Andrea is dating someone.  
[*Sluicing – compare to (3)*]

This restriction is usually attributed to the Backward Anaphora Constraint (Langacker 1969; Ross 1967, 1969), which states the following.

(5) *Backward Anaphora Constraint (BAC)*

Anaphoric elements (of which ellipsis sites are a special case) may not simultaneously command and linearly precede their antecedents.

However, there are cases that appear to violate the BAC. For instance (and note that prosody is quite important):

(6) Alicia BOUGHT [\_\_\_], and Beatrix is NOW READING the latest Neal Stephenson novel.

(7) I normally DON'T [\_\_\_], but Steve ALWAYS drinks wine during dinner.

The standard wisdom about apparent violations of the BAC is that they are not derived via ellipsis, but via Right Node Raising (RNR) –cf. Hankamer (1973). This, however, is a half-solution, in that it tells us what RNR is not, but it doesn't tell us what it is.

## 1.2 Dealing with RNR

As of today, there are three major ways of dealing with RNR:

- RNR is a case of rightward ATB extraction (McCawley 1982; Sabbagh 2007).
- RNR is a case of backward ellipsis (Abels 2004; Ha 2008).
- RNR is a case of multidomination (Wilder 1997, 1999; Gracanin-Yukse 2007, 2009).

We know that the first option is incorrect, because RNR differs from leftward ATB extraction in ways that suggest that the former does not involve movement. To begin with, RNR is island insensitive, whereas leftward ATB is not.

- (8) a. Alice is talking to the man who composed, and Beatrix is having dinner with the pianist who performed, a beautiful sonata.  
 b. \* Which sonata is Alice talking to the man who composed, and Beatrix having dinner with the pianist who performed?

Sabbagh (2007) has argued that this asymmetry can be explained if island effects arise when we are trying to reorder constituents across spell-out domains (i.e., islands are a purely PF phenomenon). However, this solution obviates the fact that RNR is also insensitive to weak islands, which are a purely LF phenomenon (cf. Szabolcsi and Zwarts 1993), and as such independent of constraints on linear order.

- (9) a. I didn't say that Alice had talked, and that Beatrix had replied, in a loud voice.  
 b. \* How didn't you say that Alice had talked and that Beatrix had replied?

Second, RNR allows preposition stranding in languages that otherwise never allow preposition stranding, such as Irish (original data from McCloskey 1986).

- (10) a. Níl sé in aghaidh an dlí a thuilleadh a bheith ag éisteacht le nó ag breathnu  
 is.not it against the law anymore to.be listening with or looking  
 ar [ráidió agus teilifís an Iarthair]  
 on radio and television of West  
 "It's no longer against the law to listen, or to watch, Western radio or television"  
 b. \* Bhí mé a éisteacht le inné [clár mór fada ar an ráidió faoin  
 was I listening with yesterday program great long on the radio about  
 toghachán]  
 election  
 "Yesterday I was listening to a great long program on the radio about the election"

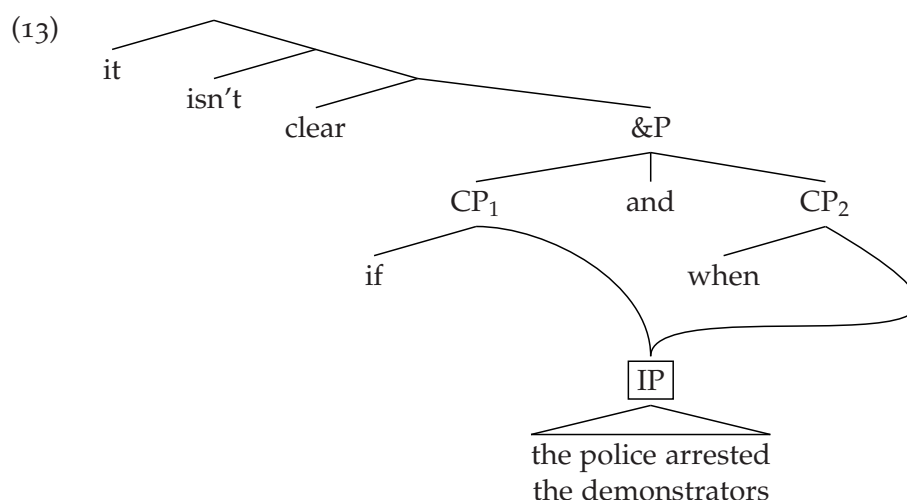
For more arguments, see Ha (2008, 36-41). We conclude, then, that **RNR does not involve movement**. However, the debate about what it actually is still continues. Is it BAC-violating backward ellipsis or multidominance? A case that has received some attention recently is what Giannakidou and Merchant (1998) called *reverse sluicing*, and which some people have rechristened with the theoretically less loaded term *wh-word coordination*. We'll call it *TP RNR*.

(11) It is not clear **if and when** the police arrested the demonstrators.

Giannakidou and Merchant propose that these examples are cases of backward sluicing, in violation of the BAC. This is unlikely, though: one pretty strong indication that we are not dealing with sluicing is that *if* does not support ellipsis of its complement IP.

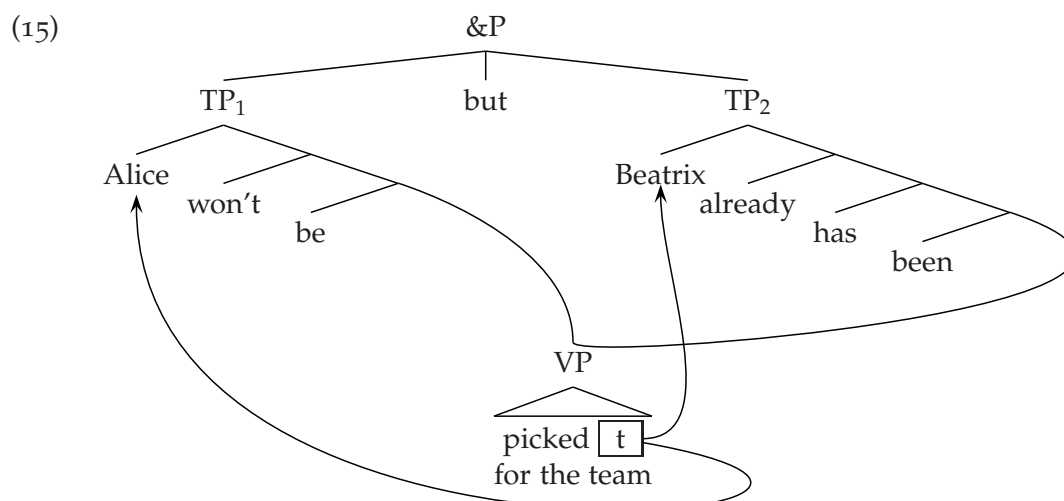
(12) \* It is not clear when the police will evict the squatters. In fact, it is not even clear if [\_\_].

More recently, Gracanin-Yukseki (2007, 2009) has proposed to reanalyze such cases as instances of multidomination, schematically represented below (note that her approach to multidomination is considerably more intricate –however, this much is enough for our purposes).



Is this analysis extensible to examples like (7)? We believe not. The fact that each conjunct in (7) inflects its verb differently (*do not drink* vs. *drinks*) can be attributed to the fact that multidominance happens at the *vP* level, and therefore doesn't affect the inflectional heads responsible for the different forms. More complicated, though, are cases with passive clauses in each conjunct, where different subjects must have originated in one and the same argument position.

(14) Alice won't BE [\_\_], but Beatrix has already BEEN picked for the team.



Here is a similar example in Korean, with long distance scrambling out of an RNR site.

- (16) Makkelli-lul John-un, (kuliko) soju-lul Bill-un, Mary-ga masiesstako  
 rice.wine.ACC John.TOP and hard.liquor.ACC Bill.TOP Mary.NOM drank  
 sayngkakhanta.  
 thinks  
 "John thinks that Mary drank rice wine, and Bill thinks that Mary drank hard liquor"

**Our goal for today** To figure out which violations of the BAC are actual cases of ellipsis (and therefore require a redefinition of the BAC) and which are illusions caused by multidominance.

**Working hypothesis** Backward ellipsis is possible only in those cases where the corresponding forward ellipsis is also possible. Elsewhere, multidominance happens.

## 2 Prosodic conditions on backward sharing

Féry and Hartmann (2005) and Ha (2008) observe that RNR has the following prosodic properties.

- Pitch accent is assigned to the last element of the first conjunct and to the last element of the second conjunct before the RNR-ed material. From this, it follows that the RNR material cannot strand phonologically weak elements, like determiners or contracted auxiliaries.

- (17) a. \* Alice always wanted to have A [\_\_\_], so I gave her MY coffee grinder.  
 b. \* I think I'D [\_\_\_], but I'm sure YOU'LL buy that old Dire Straits vinyl.

- The first conjunct has a much more marked final rising tone than in a comparable non-RNR sentence.
- The RNR-ed material has to form an intonational phrase. This bars RNR of elements that are too small for this, like pronouns or demonstratives.

- (18) a. \* Alice BOUGHT [\_\_\_], and Beatrix STOLE it.  
 b. \* Alice BOUGHT [\_\_\_], and Beatrix STOLE that.

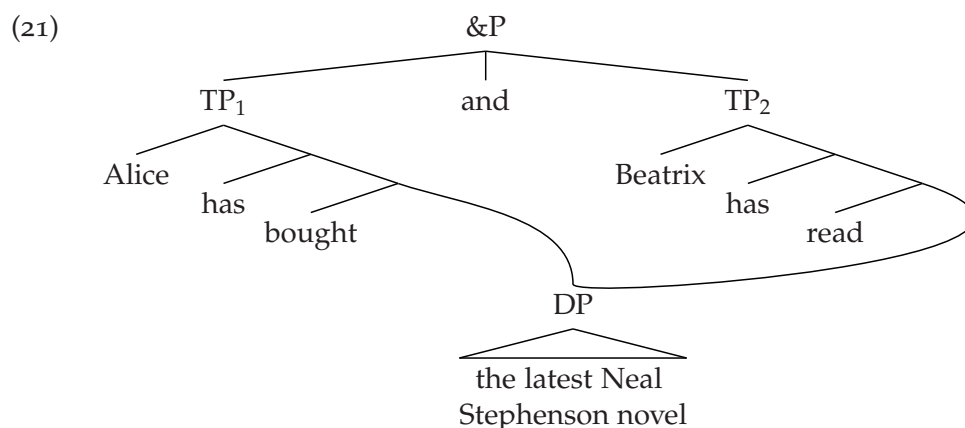
### 3 Argumental RNR

English doesn't have argument ellipsis. . .

(19) \* Alice has read the latest Neal Stephenson novel, and Beatrix has read [ ] too.

. . . therefore we predict that argumental RNR will not be backward ellipsis, but rather multidomination.

(20) Alice has BOUGHT [ ], and Beatrix has READ the latest Neal Stephenson novel.



#### 3.1 Arguments against ellipsis

**Sloppy identity** Argumental RNR doesn't allow sloppy identity effects, unlike other types of ellipsis.

- (22) a. Alice loves her mother, and Beatrix does [ ] too.  
 [=Alice loves Alice's mother, and Beatrix loves Beatrix's mother]
- b. Alice LOVES [ ] and Beatrix HATES her mother.  
 [≠Alice loves Alice's mother, and Beatrix loves Beatrix's mother]

**Extraction out of RNR site** Argumental RNR doesn't allow double extraction out of the ellipsis site, unlike other types of ellipsis. This follows if it is multidomination, because the two extractees have to compete for the same source slot.

- (23) a. I don't know which puppy you should adopt, but I know which one you shouldn't [ ]. [Schuyler 2001]
- b. \* Which French poet did Alice READ [ ], and which German composer did Beatrix WRITE a dissertation about?

**Relational modifiers** In argumental RNR, the shared material can be modified by relational adjectives like *same* and *different* in ways that are not available in regular sentences (Abels 2004).

- (24) a. Alice COMPOSED [ ], and Beatrix PERFORMED different songs.  
 [=Alice composed a song, Beatrix performed a song, and the two songs were different]
- b. Alice composed different songs, and Beatrix performed different songs.  
 [≠Alice composed a song, Beatrix performed a song, and the two songs were different]

**A loose end: morphological mismatches** Ha (2008) offers the following example.

- (25) a. Alice READ [\_\_\_], but he hasn't UNDERSTOOD any of my books.  
 b. Alice read {✓some/\*any} of my books, but he hasn't understood any of my books.

This example parallels the situation with regular VP ellipsis.

- (26) a. Alice didn't buy anything for Christmas, but Beatrix did [\_\_\_].  
 b. Alice didn't buy anything for Christmas, but Beatrix bought {✓something/\*anything} for Christmas.

We are not sure how to treat this example, other than to say that both *some(thing)* and *any(thing)* are essentially the same element (non-specific indefinites), and that their surface form depends on the environment they appear in.

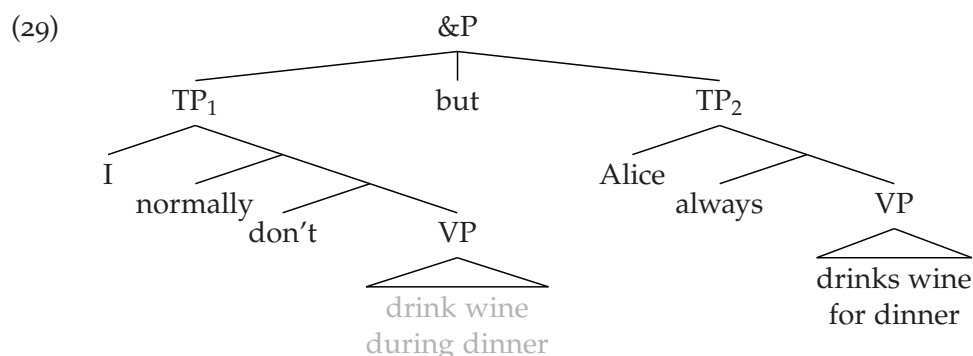
## 4 VP RNR

English allows forward VP ellipsis...

- (27) Alice read a book, and Beatrix did [\_\_\_] too.

... therefore we predict that RNR of VPs should be a case of backward ellipsis (we represent ellipsis with a light gray font).

- (28) I normally DON'T [\_\_\_], but Alice ALWAYS drinks wine during dinner.



### 4.1 Arguments for ellipsis

**Vehicle change** VP RNR shows vehicle change (Condition C obviation) effects, just like regular VP ellipsis.

- (30) a. John hopes that Susan won't [fire John], but the secretary knows that she will fire John.  
 b. Susan is thinking of firing John, and he thinks she will [fire John]

**Morphological mismatches** Second, VP RNR also shows morphological mismatch effects, just like forward VP ellipsis.

- (31) a. John won't [negotiate his salary], but Susan already has negotiated her salary  
 b. John won't negotiate his salary, but Susan already has [negotiated her salary]

**Extraction out of RNR site** VP RNR allows passive clauses in both conjuncts. If it wasn't a case of ellipsis (but rather multidominance), the subjects would have to be generated in one and the same argument position.

- (32) a. John won't be [picked for the team], but Mary has already been picked for the team.

**Sloppy identity** It is possible to get sloppy identity effects with VP RNR. Sloppy identity, as we saw above, is quite degraded with argumental RNR.

- (33) Alice DOESN'T [love her mother], but Beatrix DOES love her mother.  
[=Alice doesn't love Alice's mother, but Beatrix loves Beatrix's mother]

**Voice mismatches** VP RNR allows (albeit somewhat marginally) voice mismatches, in the same way as forward VP ellipsis.

- (34) a. This material can be presented in an informal manner, and I often do [present it in an informal manner].  
b. ? This material can BE [presented in an informal manner], and I often DO present it in an informal manner].

## 5 The fascinating TP RNR construction

These are the examples initially discussed in Giannakidou and Merchant (1998), and subsequently discussed by many others.

- (35) It is unclear if or when the police will evict the squatters.

We know that English allows forward TP deletion. This is the famous sluicing construction.

- (36) Alice is eating something, but I don't know what [ ].

Consequently, we expect TP RNR to be derivable via ellipsis. This is what Giannakidou and Merchant originally proposed. However, more recently, Gracanin-Yukse (2007, 2009) has proposed a different, multidominance based analysis.

### 5.1 Properties of TP RNR (from Gracanin-Yukse 2009)

**Optionally vs. obligatorily transitive predicates** Backward TP sharing requires that shared predicate be interpreted as transitive in one conjunct and intransitive (in reality, unergative) in the other.

- (37) Which song and why did Alice sing?  
[≈ which song did Alice sing, and why did Alice sing?]  
[≠ which song did Alice sing, and why did Alice sing it?]

**Impossibility of including a wh- subject** Gracanin-Yukse (2009) observes that the first wh-word in TP RNR cannot be a subject.

- (38) a. \* Tell me who and when sang.  
 b. \* Tell me who and why ate.  
 c. \* Tell me who and how fixed the sink.  
 d. \* Tell me who and where gave a talk.

**Subject vs. object depictives** TP RNR only accepts subject-oriented secondary predicates.

- (39) a. What and where did Alice ate drunk?  
 b. \* What and where did Alice ate raw?

**Impossibility of P-stranding** The second conjunct may not contain a preposition associated to the first wh- word.

- (40) a. About which animal and when did you read a book?  
 b. \* Which animal and when did you read a book about?

## 5.2 How to deal with these properties

The fundamental insight of Gracanin-Yukse (2009) is that, for TP RNR to be grammatical, each of the conjuncts has to be grammatical on its own. Thus, (40b) is ungrammatical for the same reason the following example is ungrammatical. As far as we can see, this follows independently of whether ellipsis or multidomination is the correct analysis.

- (41) \* Which animal did you read a book, and when did you read a book about?

Similarly for (39b) and (38).

- (42) a. \* Tell me who sang and when sang.  
 b. \* What did Alice eat, and when did Alice eat raw.

All of this follows from the very first property, i.e., the two conjuncts cannot be both transitive. The question is why that one property should hold. Gracanin-Yukse proposes that it is because, if the second conjunct were transitive, we would violate her **Constraint On Sharing (COSH)**.

- (43) *Constraint on Sharing Gracanin-Yukse 2009, 16*  
 For any  $\alpha$ ,  $M$ , and  $N$ , where  $M \neq N$  and.
1.  $M$  and  $N$  are both mothers of  $\alpha$ , and
  2.  $\alpha$  does not have a unique highest mother (a mother that dominates all other mothers of  $\alpha$ ,
- for any terminal node  $\beta$ , if  $M$  completely dominates  $\beta$ , then  $N$  must also completely dominate  $\beta$
- (44) *Complete dominance*  
 $\alpha$  completely dominates  $\beta$  iff every upwards path from  $\beta$  to the root includes  $\alpha$ .

### 5.3 Virtues and problems of an ellipsis approach

An ellipsis approach is optimal in that it doesn't require anything beyond what is already required for forward ellipsis. However, as noted above, it incorrectly predicts that TP RNR should be impossible with *if*, as this element doesn't license ellipsis of its complement.

(45) \* It is not clear when the police will evict the squatters. In fact, it is not even clear if [\_\_\_].

### 5.4 Virtues and problems of a multidominance approach

The main virtue of this approach is that, if we accept the CASH restriction, then we get all the other properties for free. Moreover, we don't have to worry about *if* not licensing ellipsis of its complement, because TP RNR would not be ellipsis under this approach.

On the other hand, the combination of transitive and intransitive predicates would be difficult: if there is only one verb that is shared by both conjuncts, then the interpretation should be either (i) both conjuncts are transitive; or (ii) both conjuncts are intransitive. A mixed interpretation would be out, because it would amount to a violation of the  $\theta$ -criterion (independently of whichever technical incarnation we prefer for it). Note that we cannot resort to sticking a silent variable in the relevant object position and then apply  $\exists$ -closure to it, as this process is not generally available in English:

(46) \* Alice read [variable]  
[intended; Alice read it/something]

Furthermore, Giannakidou and Merchant (1998) also point out a number of ways in which TP RNR differs from more familiar forms of RNR, e.g.,

(47) a. \* I don't remember that or when Jack got married.  
b. Lucy claimed that, but couldn't say exactly when, the strike would take place.

## 6 What happens to the Backward Anaphora Constraint?

Obviously, some of the things we've said here violate the BAC, repeated here,

(48) *Backward Anaphora Constraint (BAC)*  
Anaphoric elements (of which ellipsis sites are a special case) may not simultaneously command and linearly precede their antecedents.

So we need a new formulation of the BAC that takes these cases into account. Note that we cannot simply say that the violations happen only within coordinate structures, given that Phillips (1996) gives examples in which RNR happens within a single sentence.

(49) a. The people who liked [\_\_\_] easily outnumbered the people who disliked, the movie.  
b. Politicians who have fought for [\_\_\_] may well snub those who have fought against, animal rights.  
c. Spies who learn when [\_\_\_] can be more valuable than those able to learn where, major troop movements are going to occur.

## 7 Conclusions, non-conclusions, and prospects

- Argumental RNR and VP RNR can be covered quite easily on the assumption that the former is multidominance while the latter is backward ellipsis.
- The division of labour in the previous point can be predicted from the hypothesis that backward ellipsis is possible only if the corresponding type of forward ellipsis is also possible.
- This much violates the Backward Anaphora Constraint in its classical formulation. We still don't know what to do about it.
- We also don't know yet what to do about TP RNR, as neither of the available options are satisfying enough.

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