Syntactic Mismatch in French Peripheral Ellipsis

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Abstract We provide new data showing that the commonly assumed identity constraint on shared material in right-node raising (RNR), or right peripheral ellipsis, should be relaxed. RNR has always been set apart from other kinds of ellipsis in this respect, and alternative analyses have been proposed: multidominance (McCawley 1982, Bachrach & Katzir 2009) or backward deletion (Kayne 1994, Chaves 2014). The data we provide about determiner, preposition and voice mismatch, put RNR back in the family of elliptical constructions. Since RNR may also involve non constituents, and imposes syncretism on the shared material, we propose an analysis in Head-driven Phrase Structure Grammar in terms of phonological identity of meaningful material, allowing for mismatches of grammatical markers.

Keywords French · ellipsis · mismatch · HPSG · right-node raising

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1 Syntactic Mismatches in Ellipsis

Elliptical constructions come in different types: sluicing, gapping, VP ellipsis, right-node raising (RNR) (or peripheral ellipsis). They have been analyzed using syntactic reconstruction (Merchant 2001), semantic reconstruction (Dalrymple et al. 1991) or mixed approaches (Ginzburg & Sag 2001, Culicover & Jackendoff 2005).

It is well-known that syntactic mismatches may arise between the material missing in the elliptic clause (the target) and the material present in the full clause (the source): the source and the target have different syntactic categories, or different grammatical features. In (1a) there is tense mismatch between the source and the target in (1b) agreement mismatch, in (1c) voice mismatch (Hardt 1993, Kehler 2000), and, in (1d) category

mismatch (Kehler 2000).

(1)   a. I have looked into this problem and you should ~~look into that problem~~.
      b. Paul is at home and his sons ~~are~~ at school.
      c. This problem was to have been looked into, but obviously nobody did ~~look at it~~.
      d. This letter deserves a response, but before you do ~~respond~~ ...

In (1a) the reconstructed material would be *look into this problem*, in (1b) *are*, in (1c) *look into this problem*, and in (1d) *respond*. These mismatches argue against a deletion-and-copy approach to ellipsis. They argue for a semantic reconstruction at LF. For VP ellipsis, they have served as argument for a null complement analysis (Hardt 1993, Ginzburg & Sag 2001). For gapping, they have served as argument for a fragment analysis (Culicover & Jackendoff 2005, Abeillé et al. 2014).

   Voice mismatch has been discussed for VP ellipsis (Kehler 2000, Merchant 2012) and pseudo-gapping (2a) (Miller 2014). As shown by Kertz (2013), voice mismatch is allowed (2b) unless there are contrastive topics (2c).

(2)   a.   The savory waffles are ideal for brunch, served with a salad, as you would a quiche. (COCA, magazine)
      b.   This information could have been released by Gorbachev, but he chose not to. (Hardt 1993)
      c.   # The incident was reported by the driver, and the pedestrian did too.

   Merchant (2012) argues that no voice mismatch is possible in other kinds of ellipsis such as gapping and sluicing. No such mismatches have been reported so far for right-node raising, or peripheral ellipsis.

2 Peripheral Ellipsis

Peripheral ellipsis is usually known as RNR (Ross 1967) but involves left-peripheral material in verb-final languages (Yatabe 2001).

(3)   John likes ~~bananas~~ but Mary dislikes bananas.

With pro-drop languages, a distinction should be made between peripheral ellipsis and subject or object drop (Yatabe 2001, Abeillé & Mouret 2010). For example, in French, verbs like *pouvoir* 'can' allow for null pronominal complements (4b). So (4a) can be analysed as a clausal coordination with a null pronoun in the first clause, and not as peripheral ellipsis.

(4) a. Je peux et   je veux partir.
         I   can and I want leave
         'I can and I want to leave.'

     b. Je veux partir et   je peux.
         I   want leave and I can
         'I want to leave and I can.'

Abeillé (2006) also proposes to distinguish peripheral ellipsis from lexical coordination (5). In what follows, we are careful to only take examples which undisputely fall under peripheral ellipsis: involving more than lexical coordination and where the shared material is obligatory, and the first conjunct ungrammatical without it.

(5) a. [le   ou la]   responsable
         the.M.SG or the.F.SG responsible
         'the man or woman in charge'

     b. Paul [apprécie   et   approuve] votre proposition.
         Paul appreciates and supports   your proposal
         'Paul appreciates and supports your proposal.'

Peripheral ellipsis shows the following properties. It can occur outside coordination or dialogue (6a,b) (Williams 1990, Abeillé & Mouret 2010). It can apply to non-maximal constituents (6c) and to word parts (6d) (Chaves 2008).

(6) a. Anyone who meets really comes to like our sales people.

     b. On préfère ce que fait à ce que dit   un Président.
         one prefers what does to what says a   president
         'One prefers what a President does to what he says.'

     c. It was a sweet and an intelligent dog. (Switchboard corpus, Penn Treebank)

    d.   These events took place in pre- or in post-war Germany?

Peripheral ellipsis is usually assumed to impose strict identity conditions. As Chaves (2014) points out, inflection differences (7a), gender differences (7b), number differences (7c) and polarity differences (7d) make peripheral ellipsis unacceptable.

(7)   a.   * I like ~~playing guitar~~ and I will play guitar.

      b.   * I know that Paul ~~is leaving~~ but I don't know whether his children are leaving.

      c.   * Paul saved ~~himself~~, but Mary didn't save herself.

      d.   * Paul read ~~some book~~ but he didn't understand any book.

According to Pullum & Zwicky (1986), mismatches require syncretic forms (8b,c). When the first conjunct and the second conjunct do conflict, the syncretic form resolves this conflict.

(8)   a.   * I already have ~~clarified the situation~~ and you certainly will clarify the situation.

      b.   I already have ~~set the record straight~~ and you certainly will set the record straight.

      c.   Certaines agences ont déjà   ~~fermé leurs portes~~ ou
         certain   agencies have already ~~closed their doors~~ or
         vont bientôt fermer leurs portes.
         will soon   close   their doors
         'Certain agencies have already or will soon close their doors.'
         (Le Monde) (Abeillé & Mouret 2010)

On the semantic side, peripheral ellipsis needs no referential identity (9a,b) but requires lexematic identity (9c,d).

(9)   a.   Paul buys ~~old books~~, and his brother sells, old books.

      b.   Do you want to meet ~~a movie star~~ or to be a movie star? (Whitman 2005)

      c.   # Robin swung ~~an unusual bat~~ and Leslie tamed an unusual bat. (Levine & Hukari 2006)

      d.   # Paul a   rencontré ~~un avocat~~ et   il   mange un avocat.
         Paul has met   ~~a lawyer~~ and he eats   an avocado

2.1 Determiner Mismatch in Peripheral Ellipsis

We argue that peripheral ellipsis may involve a determiner mismatch in French. Mouret & Abeillé (2011) provide an example with the negative polarity marker *de*:

(10) Il y a des langues qui ont ~~une flexion casuelle~~,
there are INDEF.PL languages REL.SBJ have ~~an inflection case~~

et des langues qui n' ont pas, de flexion
and INDEF.PL languages REL.SBJ NEG have NEG, INDEF inflection

casuelle.
case

'there are languages that have and languages that don't have case inflection.' (C. Hagège)

A *de* complement is not grammatical without the negation, and a determinerless complement is not either. (10) cannot be a case of complement drop since *avoir* does not allow for a null complement in French (Abeillé & Godard 2002).

Since no French corpora are annotated for ellipsis, we conducted a manual corpus study on the internet, with patterns involving coordination of clauses with frequent transitive verbs, with pronominal subjects, and a *de*-NP object. We found many similar examples on the Internet, some from carefully edited texts (11). They may involve a singular *un, une, du* or plural indefinite *des*.

(11) a. Les textes actuels permettent de citer à l'audience une
the texts current allow to cite in court a

personne, qu' elle ait ~~une dernière adresse connue~~
person COMP she has.SBJV ~~a last address known~~

ou qu' elle n' ait pas de dernière adresse
or COMP she NEG has.SBJV NEG INDEF last address

connue.
known

'The current texts allow one to cite in court a person, whether she has or she does not have any known adress.' (Avis Conseil d'Etat, July 2013)

b. Que la consommatrice cherche ou ne   cherche pas un
   COMP the consumer.F.SG look.for or NEG look.for not a
   produit, qu'   elle ait   ~~du mal à le localiser~~
   product, COMP she has.SBJV ~~INDEF.M.SG trouble to it locate~~
   ou qu' elle n' ait   pas de   mal   à le localiser,
   or COMP she NEG has.SBJV NEG INDEF trouble to it locate,
   il semble que son comportement [. . .]
   it seems that her behaviour   [. . .]
   'Whether the consumer is or isn't looking for a product, whether
   she has or she doesn't have trouble locating it, it seems that her
   behaviour [. . .]' (Franck Cochoy, *Les figures sociales du client*,
   2002)

c. C' est de la responsabilité de l'   Eglise de venir en aide
   It is of the responsability of the Church to come in help
   aux   migrants et aux   réfugiés qu' ils
   to.DET.PL migrants and to.DET.PL refugees COMP they
   aient   ~~des papiers~~   ou qu' ils n' aient
   have.SBJV ~~INDEF.MPL papers~~ or COMP they NEG have.SBJV
   pas de   papiers.
   NEG INDEF papers
   'It is the Church's responsibility to help migrants and refugees
   whether they have or don't have papers.' (Mgr Dognin, Tours,
   2014/08/01)

Such indefinites are analysed as markers in French (Dobrovie-Sorin &
Beyssade 2004). When a more meaningful determiner is involved (12),
such mismatches are more difficult.

(12) a. # Il y a   des   langues qui   ont
         there are INDEF.FPL languages REL.SBJ have
         ~~une flexion casuelle~~ et des   langues qui   n'
         ~~an inflection case~~   and INDEF.PL languages REL.SBJ NEG
         ont aucune flexion   casuelle
         have any   inflection case
         'There are languages which have and languages which have
         no case inflection.'

b.   qu'elle ait ~~deux adresses~~ ou qu'elle n'ait pas deux adresses ...

'whether she has or she does not have two adresses ...'
≠ qu'elle ait ~~une adresse~~ ou qu'elle n'ait pas deux adresses ...

Further examples of mismatch involve bound determiners, in idiomatic expressions such as *ouvrir sa gueule* 'speak out' (lit: 'open one's mouth'):

(13)   Je parle (...) de tous ceux qui   se   sont   battus pour
       I   speak (...) of all   those REL.SBJ REFL AUX.3PL fighted for
       que   je ~~puisse ouvrir ma gueule~~ et   que tu puisses ouvrir
       COMP I ~~can.SBJV open my mouth~~ and COMP you can.SBJV open
       ta   gueule en toute liberté
       your mouth in all   liberty

       'I speak (...) of all those who have fought so that I and that you can speak out freely.' (`mouvement-ultra.forumactif.fr`, 2009)

2.2 Preposition Mismatch in Peripheral Ellipsis

As observed by Mouret & Abeillé (2011), some weak prepositions may also differ between the first and second conjunct. The preposition *à* is obligatory with *parvenir* 'manage', and *de* with *incapable* 'unable' (14). This cannot be a case of complement drop. The verb *parvenir* and the adjective *incapable* cannot appear without the complement even if the content of the complement is mentioned in the discourse.

(14)   a. Ce parti ne   parvient pas ~~à surmonter ses contradictions~~,
           this party NEG manages NEG ~~to overcome its contradictions~~
           voire   ne   souhaite pas, surmonter ses contradictions.
           and.even NEG wishes   NEG overcome its contradictions
           'This party cannot manage, and may not even want to overcome its contradictions.' (Le Monde, French Treebank)

       b. Une personne sur trois est incapable
           one person   on three is unable
           ~~de mener une vie indépendante~~ ou a   beaucoup de mal
           ~~to lead a life independent~~   or has much   of trouble

à   mener une vie indépendante.
to lead   a   life independent

'One person out of three is unable or has trouble leading an
independent life.' (France Inter, radio corpus Ester)

Since no French corpora are annotated for ellipsis, we conducted, again,
a manual search on the internet, with patterns involving coordination of
clauses with frequent verbs, taking *à* or *de* complements. We found many
similar examples on the Internet, some from carefully edited texts. *À* and
de are analyzed as infinitival markers (Abeillé et al. 2006). Mismatches
with more meaningful prepositions would be more difficult:

(15) Qui est ~~pour démissionner~~ et   qui n'   est pas pour
      who is for resigning   and who NEG is   NEG for
      démissionner ?
      resigning

      'Who is and who is not in favour of resigning?'
      ≠ Qui est ~~contre démissionner~~ et qui n'est pas pour démissionner ?

      'Who is against resigning and who is not for resigning?'

Although we did not conduct a systematic search, we also found some
mismatches with a nominal complement (16a). As French prepositions
à/de give rise to portmanteau forms *au/du*, some examples combine prepo-
sition and determiner mismatches (16b,c).

(16)   a. un français   qui   va ~~à Hondarribia~~ ou qui
           a French-man REL.SBJ goes to Hondarribia or REL.SBJ
           revient d'   Hondarribia ne verra   que des
           returns from Hondarribia NEG see.FUT only INDEF.MPL
           panneaux et   des   cartes avec *Hondarribia*
           signs   and INDEF.FPL maps with Hondarribia

           'A French man who goes or who comes from Hondarribia will
           only see signs and maps with *Hondarribia*.' (discussion, Wiki-
           pedia, 2007)

       b. les brancardiers   [...] avec toujours un sourire ou un
           the stretcher bearers [...] with always   a   smile or a

mot   rassurant   pour un malade qui   va
word reassuring for   a   patient REL.SBJ goes
~~au bloc~~   ou qui   revient du   bloc.
~~to.DET.M.SG room~~ or REL.SBJ returns FROM.DET.M.SG room
'the stretcher bearers [. . .] with always a smile or a reassuring word for a patient who is going or who is coming back from the operating room' (blog 2015)

c. même s' il   rencontre ~~le pape François~~ ou s' il   téléphone
   even   if he meets   ~~the pope Francis~~ or if he calls
   au   pape François, il ne   prend pas sa place.
   to.DET.M.SG pope François, he NEG takes NEG his position
   'even if he meets or if he calls Pope Francis, he doesn't take his position' (`lepeupledelapaix.forumactif.com`, 2015)

Similar examples can be found in English (Bilbîie 2013) (17a) and Spanish (Camacho 2003) (17c).

(17) a. They were also as liberal ~~as any other age group~~ or more liberal than any other age group in the 1986 through 1989 surveys. (Wall Street Journal, Penn Treebank)

   b. They were also as liberal as/*than any other age group . . .

   c. Primero amedrentaron ~~a los manifestos~~   y   luego
      first   harassed.3PL   ~~to the demonstrators~~ and then
      dispararon contra los manifestantes.
      shot.3PL   against the demonstrators
      'First they harassed and then they shot at the demonstrators.'

   d. Amedrentaron *(a) los   manifestos.
      harassed.3PL   to DEF.M.PL demonstrators
      'They harrassed the demonstrators.'

2.3 Experiment 1: Acceptability of Determiner and Preposition Mismatch

We performed experiments for determiner and preposition mismatches. The target items were inspired from attested examples with mismatches,

and presented in three conditions:[1]

  a. With ellipsis with determiner or preposition mismatch

    (18)   Il y a   des   gens   qui   ont, et des
                 there are INDEF.PL people REL.SBJ have and INDEF.PL
                 gens   qui   n' ont pas, de   problème de poids.
                 people REL.SBJ NEG have NOT INDEF problem of weight
                 'There are people who have and people who don't have a
                 weight problem.'

  b. Without ellipsis nor mismatch (object clitic or pro-drop)

    (19)   Il y a   des   gens   qui   ont un problème de
                 there are INDEF.PL people REL.SBJ have a   problem of
                 poids, et des   gens   qui   n' en ont pas.
                 weight and INDEF.PL people REL.SBJ NEG of.it have NEG
                 'There are people who have a weight problem and people
                 who don't have one.'

  c. With ellipsis without mismatch

    (20)   Il y a   des   gens   qui   ont, et des
                 there are INDEF.PL people REL.SBJ have and INDEF.PL
                 gens   qui   n'ont pas, un problème de poids.
                 people REL.SBJ NEG have a   problem of weight
                 'There are people who have and people who don't have a
                 weight problem.'

  We also included control items in three conditions:

  a. Grammatical control

    (21)   Jean a   le courage de ses opinions.
                 Jean has the courage of his opinions
                 'Jean stands up for what he believes.'

  b. Ungrammatical control (zero determiner or preposition)

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[1]The full set of experimental items is available at the site `http://www.llf.cnrs.fr/Ressources/`.

(22)   * Jean a   courage de ses opinions.
        Jean has courage of his opinions

        'Jean has courage of his opinions.'

c. Ungrammatical control (wrong determiner or preposition)

(23)   * Jean a   de   courage de ses opinions
        Jean has INDEF courage of his opinions

        'Jean has any courage of his opinion.'

An acceptability judgement experiment with 24 items, 15 control and
24 fillers was programmed with Ibex platform (`http://spellout.net/`
`ibexfarm/`). 41 native speakers who were recruited on the Risc website
(`http://www.risc.cnrs.fr/`) judged the acceptability of the items on a
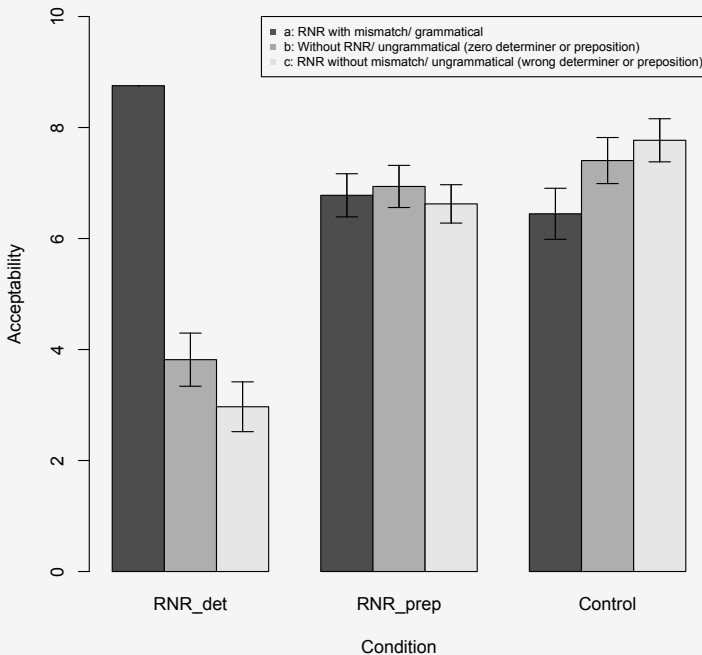10 point scale.

Figure 1 Determiner and Preposition Mismatch

As shown in figure 1, participants found no significant difference between peripheral ellipsis with a determiner mismatch (a: mean rate 6.779) and ellipsis without mismatch (c: mean rate 6.662). There was no significant difference between ellipsis with determiner mismatch (a) and coordination without ellipsis nor mismatch (b: mean rate 6.938). They found peripheral ellipsis with preposition mismatch (a: mean rate 6.445) less acceptable than ellipsis without mismatch (c: mean rate 7.77), but much higher than ungrammatical controls (mean rate 3.392). There was no significant difference between ellipsis without preposition mismatch (a) and coordination without ellipsis nor mismatch (b: mean rate 7.404). These results suggest that determiner and preposition mismatches in peripheral ellipsis are not a simple production error.

Such determiner and preposition mismatches are difficult to analyze in raising or multiple dominance approaches, since the shared element always meets the requirement of the second conjunct: it appears to fully belong to the second conjunct, and would be ungrammatical, if reconstructed verbatim into the first one.

3 Voice Mismatch in Peripheral Ellipsis

3.1 Searching for Voice Mismatch in French Peripheral Ellipsis

In French, as in English, past and passive participles are syncretic forms. However, it is not so easy to have a shared participle in final position. The same entity has to serve as the first argument (in the active) and as the second argument (in the passive), so the verb must be reversible. If we test active verbs with an NP complement and passives with a *by*-phrase, the result is a discontinuous ellipsis, which is not very natural:

(24) Le ballon aura   ~~touché l'un des joueurs sur le terrain~~ ou
      the ball   have.FUT ~~touched one of.the players on the field~~ or
      aura   été touché par l'un des   joueurs sur le
      have.FUT been touched by one of.DET.M.PL players on the
      terrain.
      field
      'The ball will have or will have been touched by one of the players on the field.' (basketsarthe.dyndns.org, 2009)

The shared elements are the participle *touché* 'touched' and the NP *l'un des joueurs sur le terrain* 'one of the players on the field', but not the preposition *par* 'by'. If we test reversible transitive verbs (*convaincre* 'convince', *comprendre* 'understand') without a complement in the active voice (prodropped object; 25a), and with a short passive, peripheral ellipsis is not very natural either (25b,c).

(25) a.   Qui a   compris   / convaincu?
            who has understood / convinced?
            'Who has understood/managed to convince?'

      b.   ? C'est ainsi qu' ont parlé ceux qui ont été
           this is how that have spoken those who have been
           ~~compris~~   et ceux qui ont compris.
           ~~understood~~ and those who have understood
           'that is how those who have been understood and those who
           have understood spoke.'

      c.   ? Paul a été ~~convaincu~~, mais son frère   a   convaincu.
           Paul has been ~~convinced~~ but his brother has convinced
           'Paul has been but his brother has managed to convince.'

Examples (25b,c) involve contrastive topics, which disallow voice mismatch in English VP ellipsis (Kertz 2013). Moreover, they do not keep the same participants: the first argument is unspecified in the short passive, whereas it is the second argument (pro-dropped object) which is unspecified in the active voice. In order to keep at least one participant constant, we conducted a manual search on the web, for coordination of relative clauses with active and passive auxiliaries.

In our search patterns, we took advantage of the fact that the active relative clauses were introduced by *que* with a gap object and an indefinite subject *on* 'one' and the passive ones were introduced by *qui* (with a gap subject), so the patient is the same in both active and passive sentences. We found a few such examples in well-written prose (26a) or as dictionary definitions (26b).

(26) a. ... donner la parole à ceux qu' on a
       ... give   the voice   to those REL one has
       ~~privés de dire~~   ou qui sont privés   de dire.
       ~~deprived of saying~~ or who are deprived of saying
       '... let those speak that one has or who are deprived of talking'
       (www.cemea.asso.fr, 1997) [Fernand Deligny]

   b. Épousée, s, /. celle   qu'   on a ~~épousée~~ ou qui
       spouse.F, s, /. that.F.SG REL.OBJ one has ~~married~~ or REL.SBJ
       doit être bientôt épousée.
       must be   soon   married
       'Spouse, -s. A woman who someone has taken as his spouse
       and who is soon to be taken as a spouse' (*Dictionnaire universel
       de la langue françoise*, PCV Boiste 1803)

In these examples, there is a semantic contrast between the two conjuncts:
in tense (past active/present passive) in (26a), in tense and modality in
(26b): past active/deontic and future passive.

   We have also looked for reflexive actives, and the results were much
more numerous, both active-passive (27a) and passive-active (27b):

(27) a. Ce pharmacien doit des   explications à ceux
       This pharmacist owes INDEF.F.PL explanations to those
       qui   se   sont ~~mobilisés pour lui~~ ou qui   ont été
       REL.SBJ REFL AUX ~~mobilized for him~~ or REL.SBJ have been
       mobilisés pour lui.
       mobilized for   him
       'This pharmacist owes explanations to those who tallied to his
       cause, or who were rallied to it.' (www.ipreunion.com, 2013)

   b. il y a   aussi, tous ceux qui   ont été ~~exclus~~ ou
       there are also   all   those REL.SBJ have been ~~excluded~~ or
       qui   se   sont exclus   [...]
       REL.SBJ REFL AUX excluded
       'there are also all those who were excluded or who excluded
       themselves ...' (www.ville-yzeure.com, 2008)

It is worth noting that these examples cannot be analysed as cataphoric VP ellipsis. Cataphoric VP ellipsis is supposed to involve subordination (28a). Furthermore, French auxiliaries do not allow for VP ellipsis (28b,c) (Abeillé & Godard 1994).[2]

(28)   a.   If you can, you should leave now.

       b.   * Jean a   démissionné mais Marie n'   a   pas.
             Jean has resigned   but Marie NEG has NEG
             'Jean has resigned but Marie has not.'

       c.   * Certains ont été   exclus   mais d'   autres n'
             certain have been excluded but INDEF.PL others NEG
             ont pas été.
             have NEG been
             'Some have been excluded but some others have not been.'

3.2 Semantic Contrast in Peripheral Ellipsis

Peripheral ellipsis requires a semantic contrast between the two conjuncts. For English, Huddleston & Pullum (2002) observe that subject contrast is not sufficient and verb contrast is needed too (29).

(29)   Bill likes, and Mary hates/#likes, the TV show. (Ha 2008)

Bilbîie (2013) conducted a systematic study of the Penn Treebank, which is annotated for ellipsis. She found that RNR is quite rare with different subjects (30a) and tends to involve S coordination with the same subject (30c,d) and more often VP coordination (30b). Usually English RNR involves a tense (30b), polarity (30c), or modality (30d) contrast.

(30)   a. The police said, all the people said, that's fine. (swbd-104656)

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[2]In German too, voice mismatch appears to be grammatical with peripheral ellipsis:

i. Einige haben sich gleich   freiwillig,   die restlichen wurden dann
    some   have SELF immediately voluntarily, the rest   were   then
    zwangsweise geopfert.
    by force   sacrified
    'Some (sacrificed) themselves voluntarily straight away, the others were later sacrificed by force.'

    b. But the South is, and has been for the past century, engaged in a wide-sweeping urbanization ... (brwn-16897)

    c. Did you or did you not say what I said you said ...? (brwn-4498)

    d. Who is and who should be making the criminal law here? (wsj-6370)

Similar results were found by Mouret & Abeillé (2011) in French written (French treebank) and spoken corpora (Ester), although their study was not systematic (the corpora are not annotated for ellipsis). In (31a), the two conjuncts contrast in modality and in (31b) in tense.

(31)   a. il ne   pouvait ~~rien lui refuser~~,   il ne   voulait
           he NEG could   ~~nothing to.her refuse~~, he NEG wanted
           rien   lui   refuser
           nothing to.her refuse

           'he couldn't refuse her anything, nor did he want to' (Ester corpus, April 2003, France Info)

     b. demain   nous verrons si   les socialistes se   sont
           tomorrow we   see.FUT whether the socialists REFL AUX
           remis   ~~de leur débâcle du 21 avril 2002~~ ou se
           recovered ~~from their defeat of 21 april 2002~~ or REFL
           remettent de   leur débâcle du 21 avril 2002
           recover   from their defeat   of 21 april 2002

           'tomorrow, we'll see whether the socialists have recovered or are recovering from their 21st April 2002 defeat' (Ester corpus, April 2003, France Inter)

3.3 Experiment 2: Testing for Voice Mismatch and Semantic Contrast in French Peripheral Ellipsis

In order to test the acceptability of the examples with voice mismatch that we found on the internet, we conducted an acceptability judgement task, with 12 target items and 56 distractors. 62 native speakers who were recruited on the Risc website (`http://www.risc.cnrs.fr/`) judged the acceptability of the items on a 10-point scale.

The target items were inspired from attested examples with mismatches, and presented in four variants:

a. With role contrast, with voice mismatch (active-passive)

> (32)   Il s'agit d' Eglises   orientales qui   se   sont, ou
>   these are of Churches eastern   REL.SBJ REFL are   or
>   qui   ont été rattachées à Rome.
>   REL.SBJ have been attached   to Rome
>   'These are Eastern Churches that joined Rome or that were joined to it.'

b. Without role contrast, with voice mismatch (active-passive)

> (33)   Il s'agit d' Eglises   orientales qu'   on a, ou
>   these are of Churches eastern   REL.OBJ one has or
>   qui   ont été rattachées à Rome.
>   REL.SBJ have been attached   to Rome
>   'These are Eastern churches that one has joined to Rome or that have been joined to it.'

c. With role contrast, without mismatch (active-active)

> (34)   Il s'agit d' Eglises   orientales qui   se   sont, ou
>   these are of Churches eastern   REL.SBJ REFL are   or
>   qu'   on a   rattachées à Rome.
>   REL.OBJ one has attached   to Rome
>   'These are Eastern churches that joined Rome, or that one joined to Rome.'

d. Without role contrast, without mismatch (passive-passive)

> (35)   Il s'agit d' Eglises   orientales qui   étaient, ou
>   these are of Churches eastern   REL.SBJ were   or
>   qui   ont été rattachées à Rome.
>   REL.SBJ have been attached   to Rome
>   'These are Eastern churches that were or that have been joined to Rome.'

There is a contrast in semantic role in (a) and (c): with a reflexive active, the agent is specified and is different from the agentless passive or from the active with an indefinite subject (*on*). On the other hand, when the active has an indefinite subject (*on*) there is no role contrast with the agentless passive (b). In the last case (d: two passives), there is no role contrast, and a minimal tense contrast (the imparfait *étaient* 'were' has a very weak contrast with the passé composé *ont été* 'have been').

The results are presented in figure 2. The items with semantic contrast and voice mismatch were rated slightly lower (a: mean rate 8.145) than those with contrast without mismatch (c: mean rate 8.217) but slightly higher than those without contrast and without mismatch (b: mean rate 8.036) and higher than those without contrast with mismatch (d: mean rate 7.667).
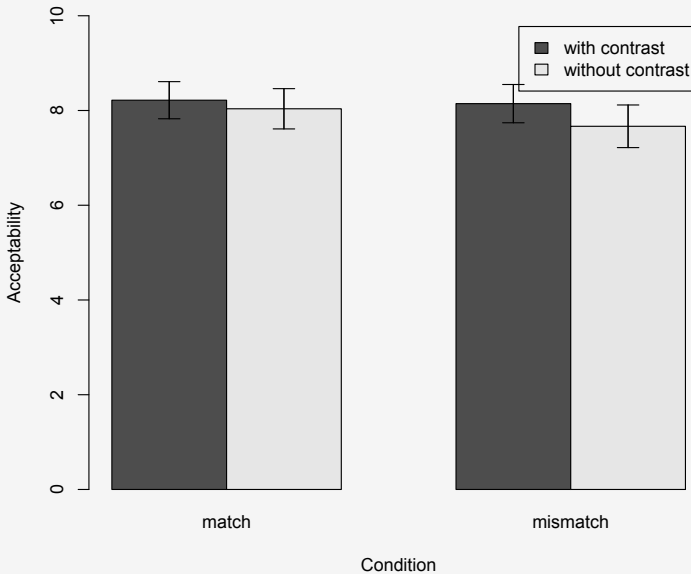
Figure 2 Voice Mismatch

We ran a mixed-effect linear regression model; there was no significant effect with match and contrast interaction. When we ran a model without interaction, there was no significant effect of voice match ($p=0.6649$) but a significant effect of contrast ($p=0.0495$). Only the semantic condition of contrast played a role: there was no significant effect of voice match

(the syntactic condition). The items with voice mismatch and role contrast were not less acceptable than the ones with voice match and no contrast.

4 An Analysis in Head-driven Phrase Structure Grammar (HPSG)

The mismatch data pertaining to peripheral ellipsis in French that we have presented in this paper provide an immediate challenge for any approach to the phenomenon that relies on *syntactic* identity of shared material, including multidominance, syntactic raising or extraction, or deletion under *syntactic* identity. The most striking case is presented by preposition mismatch, as this information cannot be easily made compatible across the two sites, since the differences must be syntactically present in order for preposition selection to work correctly when used outside this construction. We therefore argue that the data investigated here call for a revised notion of deletion under identity which cannot be syntactic in nature, but will rely instead on notions of phonological and semantic identity.

In the analysis we are going to pursue here, we shall build on previous surface-oriented approaches to non-classical coordination, as developed by Yatabe (2001, 2003), Crysmann (2003a), Chaves (2008, 2014) in the framework of HPSG.

The first major challenge the French data confront us with is how to reconcile obvious mismatch in surface form with the syncretism requirement identified by Pullum & Zwicky (1986). Given the examples in (8), we want to insist on strict phonological identity, whereas French determiner or preposition mismatch show that the phonological identity requirement must be relaxed. The second important aspect to be captured is the contrast between phonological identity and semantic, or lexemic, identity and zeugma, that is, accidental phonological identity, as witnessed by homophones, as in (9c,d). This connects to a more general requirement on theories of ellipsis, namely, the broader question of semantic recoverability.

The key to our analysis is to combine these requirements, and capitalise on the semantic difference between surface forms that allow mismatch, compared to those that do not: while permissible mismatch involves what can broadly be characterised as functional elements, strict identity appears to be required by semantically contentful material, both

on the phonological and the semantic side. Essentially, we propose that functional prepositions are semantically empty, yet syntactically selected for, which will account for their (syntactic) recoverability. Similarly, we observed that bound possessives and indefinite determiners (see (11) and (13)) contrast with true generalised quantifiers (see (12)) (Heim 1982, Dobrovie-Sorin & Beyssade 2004). Building on a previous proposal by Abeillé et al. (2006), who analyse French indefinite determiners as number markers lacking a semantic predicate, we shall assume that definite and indefinite articles are not semantically potent by themselves, but instead are markers that syntactically signal a property of the noun they specify. If this analysis is on the right track, we can characterise the conditions under which mismatch can arise as involving semantically vacuous elements only.[3]

To summarise the empirical generalisation underlying our analysis, we assume that (i) content-full peripheral material has to be shared on the right; (ii) content-less material can be asymmetrically elided on the left. The case of mismatch with content-less material can be sketched informally as follows (from (11a) and (14a)):

Determiner: <qu'elle ait> <~~une~~> <~~adresse connue~~>
   <ou qu'elle n'ait pas> <**d'**> <adresse connue>
Preposition: <ne parvient pas> <~~à~~> <~~surmonter ses contradictions~~>
   <voire ne souhaite pas> <surmonter ses contradictions>

Having outlined the basic intuitions, we are now in a position to turn to the formal analysis. As a first step towards a surface-deletion account, we need to be able to distinguish between phonological representations that are semantically grounded (exponents of semantic predicates), and those that are not (purely functional elements). In order to do this in a principled fashion, we shall postulate that members of the PHON list are structured, consisting at least of a feature SEG, which carries the segmental information proper, and LNK, which establishes a pointer to the semantic predicates it contributes to. Since bits of phonology may correspond to more than one predicate, or none, in the case of functional elements, the

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[3]If definiteness is a property associated with the head noun's semantic variable, recoverability is ensured by sharing of the noun's predicate.

value of LNK is a (possibly empty) list. We shall use Minimal Recursion Semantics (MRS; Copestake et al. 2005) as our semantic description language.

Example (36) illustrates semantic grounding of the phonology of the quantifier *aucune*, which is expressed by having the element(s) on LNK of every segment be reentrant with the lexical predicate. In general, the LNK list for every segment of a lexical (or sub-lexical) item is exactly the concatenation of the PRED values on that items list of elementary predications RELS:

(36)   Lexical representation of content-full quantifier *aucune* 'no'

$$
\begin{bmatrix}
\text{PHON} & \left\langle \begin{bmatrix} \text{SEG } o \\ \text{LNK } \langle \boxed{P} \rangle \end{bmatrix}, \begin{bmatrix} \text{SEG } k \\ \text{LNK } \langle \boxed{P} \rangle \end{bmatrix}, \begin{bmatrix} \text{SEG } y \\ \text{LNK } \langle \boxed{P} \rangle \end{bmatrix}, \begin{bmatrix} \text{SEG } n \\ \text{LNK } \langle \boxed{P} \rangle \end{bmatrix} \right\rangle \\
\\
\text{CONT} & \begin{bmatrix}
\text{INDEX} & \boxed{i} \begin{bmatrix} \text{NUM} & sg \\ \text{GEND} & f \end{bmatrix} \\
\\
\text{RELS} & \left\langle \begin{bmatrix} \text{PRED} & \boxed{P} \text{"\_aucun\_q\_rel"} \\ \text{ARG0} & \boxed{i} \\ \text{RSTR} & handle \\ \text{BODY} & handle \end{bmatrix} \right\rangle
\end{bmatrix}
\end{bmatrix}
$$

Functional elements, like the indefinite number marker UNE, by contrast, are characterised by having the empty list as the value of LNK, by virtue of the fact that the RELS list is empty and therefore does not have any elements with a PRED value, as in (37).

(37)   Lexical representation of functional indefinite *une* 'a(n)'

$$
\begin{bmatrix}
\text{PHON} & \left\langle \begin{bmatrix} \text{SEG} & y \\ \text{LNK} & \langle \rangle \end{bmatrix}, \begin{bmatrix} \text{SEG} & n \\ \text{LNK} & \langle \rangle \end{bmatrix} \right\rangle \\
\\
\text{CONT} & \begin{bmatrix}
\text{INDEX} & \begin{bmatrix} \text{NUM} & sg \\ \text{GEND} & f \end{bmatrix} \\
\\
\text{RELS} & \langle \rangle
\end{bmatrix}
\end{bmatrix}
$$

With this representation in place, we are now in a position to provide an initial account of peripheral sharing by means of the RNR unary phrase structure rule:

(38)   RNR unary rule (preliminary version)
       rnr-unary-phr →

$$\begin{bmatrix} \text{PHON} & \boxed{l_1} \oplus \boxed{r_1} \oplus \boxed{r_2} \oplus \boxed{lr} \\ \text{SYNSEM} & \boxed{s} \\ \\ \text{DTRS} & \left\langle \begin{bmatrix} \text{PHON} & \boxed{l_1} \oplus \boxed{l_2}\, list\left(\begin{bmatrix} \text{LNK}\,\langle\rangle \end{bmatrix}\right) \oplus \boxed{lr} \oplus \boxed{r_1} \oplus \boxed{r_2}\, list\left(\begin{bmatrix} \text{LNK}\,\langle\rangle \end{bmatrix}\right) \oplus \boxed{lr} \\ \text{SYNSEM} & \boxed{s} \end{bmatrix} \right\rangle \end{bmatrix}$$

As detailed by the rule definition in (38), peripheral sharing is treated as sharing of peripheral phonology $\boxed{lr}$, combined with asymmetric suppression of semantically vacuous phonological material adjacent to the left of the shared phonology. That is to say, the rule partitions the phonological list of the (single) daughter[4] into a left initial substring $\boxed{l_1}$, a left stretch of semantically vacuous segments $\boxed{l_2}$, and the left-hand part of the shared peripheral stretch $\boxed{lr}$. Similarly, it parses the remainder of the list into an initial right stretch $\boxed{r_1}$, a stretch of semantically vacuous segments ($\boxed{r_2}$), and finally the right counterpart of the shared right-peripheral stretch $\boxed{lr}$. Basic peripheral sharing is then induced by way of collapsing the two identical stretches $\boxed{lr}$ on the daughter in right-peripheral surface position on the mother. This analysis is essentially very close to previous analyses developed by Yatabe (2001, 2003), Crysmann (2003a), Chaves (2008), albeit recast to apply at a phonological level, rather than domain objects. Where our approach differs is in the treatment of mismatch: while the semantically vacuous stretch adjacent to the right-most shared stretch ($\boxed{r_2}$) must be preserved on the mother, the non-adjacent $\boxed{l_2}$ may be asymmetrically suppressed.

The partitioning of phonological strings into sub-strings by way of the RNR rule is illustrated in figure 3: it shows on the basis of RNR with determiner mismatch how the phonological sub-strings are instantiated to

---

[4]Since peripheral sharing cannot be restricted to any particular syntactic construction, like (e.g.) coordination, we picture it as a phonological edit conditioned on the presence of identical phonological material. Furthermore, since it is a phrase structure rule, it may apply recursively, that is, the analysis is not restricted to binary sharing.
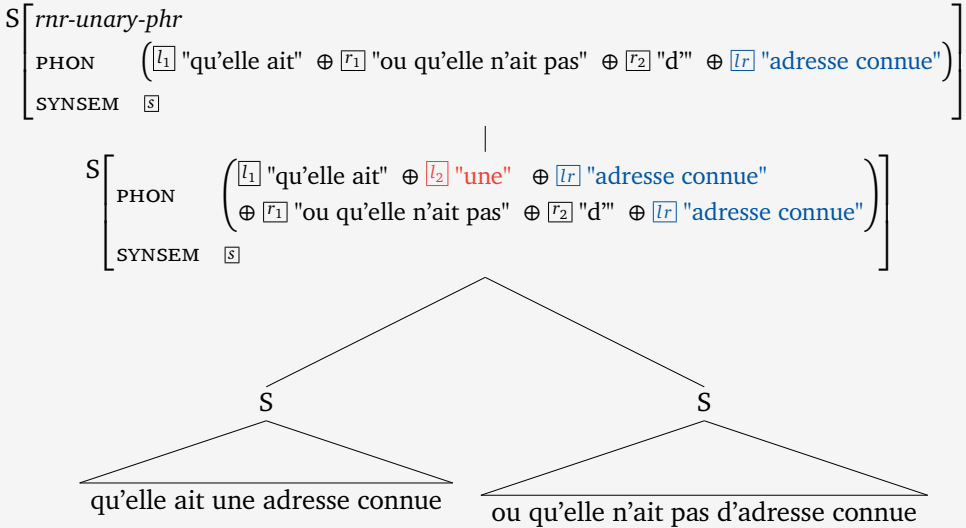
$$S\begin{bmatrix} \textit{rnr-unary-phr} \\ \text{PHON} \quad \left(\boxed{l_1}\text{ "qu'elle ait"} \ \oplus \ \boxed{r_1}\text{ "ou qu'elle n'ait pas"} \ \oplus \ \boxed{r_2}\text{ "d'"} \ \oplus \ \boxed{lr}\text{ "adresse connue"}\right) \\ \text{SYNSEM} \quad \boxed{s} \end{bmatrix}$$

|

$$S\begin{bmatrix} \text{PHON} \quad \left(\begin{matrix} \boxed{l_1}\text{ "qu'elle ait"} \ \oplus \ \boxed{l_2}\text{ "une"} \ \oplus \ \boxed{lr}\text{ "adresse connue"} \\ \oplus \ \boxed{r_1}\text{ "ou qu'elle n'ait pas"} \ \oplus \ \boxed{r_2}\text{ "d'"} \ \oplus \ \boxed{lr}\text{ "adresse connue"} \end{matrix}\right) \\ \text{SYNSEM} \quad \boxed{s} \end{bmatrix}$$

```
                    S                              S

        qu'elle ait une adresse connue      ou qu'elle n'ait pas d'adresse connue
```

Figure 3 Analysis of *qu'elle ait …*

non-shared initial stretches ($\boxed{l_1}$ and $\boxed{r_1}$), a shared right-peripheral stretch $\boxed{lr}$, and medial sub-strings, which are required to be semantically empty, thus permitting asymmetric elision on the left ($\boxed{l_2}$). For ease of exposition, we are using orthographic strings here, rather than lists of feature structures describing phonological events.

The basic analysis as developed so far already has some desirable properties: since phonology is semantically grounded, that is, the LNK feature records for every piece of phonology which predicates (if any) license it, we can straightforwardly implement a distinction between contentful and contentless phonology, thereby enabling us to selectively permit asymmetric elision of the phonology of functional elements. Furthermore, thanks to semantic grounding, sharing of phonology entails sharing of the corresponding semantic predicates. Thus zeugma will be detected as an attempt to unify distinct semantic predicates.

Finally, the surface-phonological approach also provides a direct answer for voice mismatch (from (27)):

(39)   <qui se sont> <s><mobilisés pour lui></s>
        <ou qui ont été> <mobilisés pour lui>

Verbatim sharing of participle phonology captures the syncretism require-

ment, since the rightmost passive or perfect participle is always a lexical verb, and therefore carries a semantic predicate. Syntactic properties, for example, pertaining to valency, by contrast are systematically ignored under our approach, so that conflict with respect to these properties simply cannot arise, since identity requirements are stated exclusively in terms of (semantically grounded) phonology.

Before we close, however, we shall briefly address one more central property of peripheral sharing, namely, prosodic conditioning. It has been repeatedly noted in the literature that peripheral sharing in general, and sublexical sharing in particular, are subject to phonological minimality conditions (Hartmann 2000, Chaves 2014). French peripheral sharing seems to confirm this: as we have observed above, asymmetric deletion of function words is the only way to resolve mismatch in peripheral sharing constructions. Since these function words are prosodically weak (Miller 1992), the impossibility of stranding French function words on the left ((40); from (10) and (14)) falls out, once we incorporate prosodic conditions on well-formedness.

(40) a. * Il y a   des   langues   qui   ont une
             there are INDEF.PL languages REL.SBJ have an
             ~~flexion casuelle~~, et   des   langues   qui   n'
             ~~inflection case~~   and INDEF.PL languages REL.SBJ NEG
             ont pas, de   flexion   casuelle.
             have NEG, INDEF inflection case

      b. * Ce parti ne parvient pas à
             This party NEG manages NEG to
             ~~surmonter ses contradictions~~, voire   ne   souhaite pas,
             ~~overcome its contradictions~~   and.even NEG wishes   NEG
             surmonter ses contradictions.
             overcome its contradictions

Informally,[5] this can be achieved by requiring the phonological sub-lists on the mother of (38), namely, $\boxed{l_1}$, $\boxed{r_1}$, $\boxed{r_2}$, and $\boxed{lr}$ to all coincide with prosodic word boundaries. Once this constraint is imposed, it is clear that, for ex-

---

[5]The current proposal can be made fully explicit using (e.g.) the segment-based encoding of the Prosodic Hierachy (Selkirk 1986) proposed in Crysmann (2003b:chap. 6).

ample, the non-shared left stretch $\boxed{l_1}$ cannot terminate in a weak function word, which is characterised by not having a right prosodic word boundary. As a result, such a function word can only be retained, if its host is in an adjacent surface position, leaving suppression on the left as the only option, since adjacency breaks under peripheral sharing.

The fundamental intuition behind our analysis is that mismatch in sharing is resolved in favour of keeping the contiguous right stretch intact. By resolving mismatch at the expense of asymmetric suppression of conflicting semantically empty material from the left, we can at the same time account for syncretism effects, detect zeugma, and more generally ensure semantic recoverability. However, the exact formulation, while true to the evidence presented so far, has been simplified for expository purposes. In order to capture the full range of patterns in peripheral sharing, we need to cater for two other cases of asymmetry: first, we observe that mismatch on the left is not necessarily restricted to be left-adjacent to the shared peripheral material, but may just as well be interleaved with the shared right-peripheral material, as illustrated in (41).

(41)   qu'   ils   aient   ~~fait~~   ~~des~~   ~~progrès~~ ou qu'   ils
       COMP they have.SBJV made INDEF.PL progress or COMP they
       n'   aient   pas   fait   de   progrès
       NEG have.SBJV NEG made INDEF progress
       'Whether they have made any progress or not'

As seen in this example, mismatch between the polarity variants *des* and *de* is contained within the peripherally shared stretch featuring the semantically potent *fait* and *progrès*. Mismatch resolution, however, is still in line with our baseline analysis, giving preference to preservation of material from the contiguous right-hand stretch.

The second refinement that is in order concerns what has been called medial RNR or wrapping. Apparently, the peripherality requirement can be relaxed, again favouring the contiguous stretch on the right: that is, material following the shared "peripheral" stretch can be projected asymmetrically from the right.

(42) des églises qui   se   sont ~~rattachées à Rome~~ ou qui
      churches   REL.SUBJ SELF are   attached to Rome or REL.SUBJ
      ont été   rattachées à Rome par la   force
      have been attached   to Rome by the force
      'churches which have or have have been attached to Rome by force'

As exemplified by (42), the final PP *par la force* cannot felicitously be construed with the reflexive *se sont ~~rattachés à Rome~~* on the left, but can only be associated with the passive *ont été rattachés à Rome* on the right. As a result, the shared peripheral material is not found in absolute right-peripheral position. Yet, despite this complication, wrapping still falls in with our observation that verbatim preservation of material on the right is privileged by peripheral sharing constructions.

   We therefore propose the following revised version of the unary RNR construction.

(43) RNR unary rule (final version)
      rnr-unary-phr →

$$
\begin{bmatrix}
\text{PHON} & \boxed{l_1} \oplus \boxed{r_1} \oplus \boxed{r_2} \oplus \boxed{r_3} \\
\text{SYNSEM} & \boxed{s} \\
\text{DTRS} & \left\langle
\begin{bmatrix}
\text{PHON} & \boxed{l_1} \oplus \boxed{l_2} & \left(\begin{array}{c}\boxed{lr_1} \\ \oplus \\ list\left(\begin{bmatrix}\text{LNK}\,\langle\rangle\end{bmatrix}\right) \\ \oplus \\ \boxed{lr_2}\end{array}\right) \oplus \boxed{r_1} \oplus \boxed{r_2} & \left(\begin{array}{c}\boxed{lr_1} \\ \oplus \\ list\left(\begin{bmatrix}\text{LNK}\,\langle\rangle\end{bmatrix}\right) \\ \oplus \\ \boxed{lr_2}\end{array}\right) \oplus \boxed{r_3} \\
\text{SYNSEM} & \boxed{s}
\end{bmatrix}
\right\rangle
\end{bmatrix}
$$

      where $\boxed{l_1} = \langle[], \ldots\rangle \wedge \boxed{r_1} = \langle[], \ldots\rangle \wedge \boxed{lr_2} = \langle[], \ldots\rangle$

As depicted by the rule in (43), the right-hand phonology is parsed into three partitions, each of which is projected onto the mother. This straightforwardly captures our observation made above that the right stretch is always preserved continuously. Congruent with our previous formalisation, the non-shared initial left stretch ($\boxed{l_1}$) is projected to the mother. The first deviation from the baseline formalisation in (38) relates to the mismatch exemplified in (41): instead of insisting that the semantically empty mismatching material (LNK < >) precede the shared material ($\boxed{lr}$), we parse

the relevant stretch $\boxed{r_2}$ into a possibly empty shared initial stretch $\boxed{lr_1}$, a semantically empty stretch, which is asymmetrically projected from the right, and a non-empty final shared stretch $\boxed{lr_2}$.

The second deviation from the baseline analysis concerns wrapping: unlike (38), our refined version caters for the possibility that the "peripheral" shared stretch (containing $\boxed{lr_1}$ and $\boxed{lr_2}$) need not be peripheral on the right, allowing for the possibility to project asymmetrically from the right, which will take care of wrapping or medial RNR.

To summarise, our revised analysis of French peripheral sharing integrates both medial RNR and non-peripheral asymmetric ellipsis on the left, while keeping with the fundamental intuition that peripheral sharing keeps the right stretch intact. Furthermore, sharing and asymmetric suppression on the left is constrained by strict phonological identity of semantically grounded material, simultaneously providing an account of zeugma and the syncretism requirement.

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