Peripheral ellipsis and verb mismatch

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Abstract

Right-node raising is usually set apart from other elliptical constructions for imposing a strict identity condition between the omitted and the peripheral elements. Since Pullum & Zwicky (1986), it is assumed that only syncretic forms may resolve a feature conflict between the two conjuncts (*I certainly will and you already have set the record straight.*). We present an empirical study of RNR with final verb in English and French that shows that verb mismatch does occur in corpora with and without syncretic forms, i.e. that syncretism does not appear to play a role. We present an acceptability judgement task on French that confirms this hypothesis. We therefore propose a new HPSG analysis of RNR that is based on sharing LID features and not morphophonological forms.

1   Peripheral Ellipsis and Syncretism

Peripheral ellipsis, or Right-node raising, is an elliptical construction where the right-peripheral elements of two or more clauses are shared. The construction was first mentioned by Ross (1967) (1a). It has been documented for many languages (Haspelmath (2007)) including French (1b).

(1) a.   John liked and Mary disliked *the book*.
     b.   J' ai   eu à traiter et   je traite encore *un certain nombre de*
          I have had to treat and I treat still   a   certain number of
          dossiers de ce   type.
          cases   of this kind.
          'I had to deal with and I still deal with a certain number of cases of this kind.' (Abeillé & Mouret (2010))

Peripheral ellipsis is known for imposing stricter identity conditions between the elided and the peripheral material than other elliptical constructions. Syntactic mismatches occur when the elided and the peripheral material do not have the same syntactic features. VP ellipsis (2a), gapping (2b) and pseudo-gapping (2c) allow for tense mismatch or agreement mismatch. The examples in (2) show a verb form mismatch between the missing element and the antecedent.

(2) a.   I haven't done it yet, but I will ~~do it~~. (VP ellipsis)
     b.   I want to stay and Mary ~~wants~~ to leave. (Gapping)
     c.   We'll let you know if it deals with the heat and humidity as well as it did ~~deal with~~ the frigid slop. (Pseudogapping, Miller (2014))

Previous theories do not assume the existence of syntactic mismatches in peripheral ellipsis (Beavers & Sag (2004), Chaves (2014)), be they verb form mismatch (3a) or agreement mismatch (3c).

(3)   a.   *I like *playing guitar* and I will *play guitar*.
        b.   I like playing guitar and I will.
        c.   *Paul saved *himself*, but Mary didn't save *herself*.
        d.   Paul saved himself but Mary didn't.

Note that the VP ellipsis counter parts (3b)(3d) are grammatical. Einsenberg (1973)) observes that in German, the final verb form in coordinated subordinate clauses must be the same (4a), but that "a difference in person can be sometimes compensated for by the identity of the phonological shape of the verbs": in (4c) *kaufen* can be a 1st person or 3rd person plural.

(4)   a.   weil   Hans Bier und Franz Milch trinkt...
                because Hans beer and Franz milk   drink.3SG
                'because Hans drinks beer and Franz milk...'
        b.   *weil   ich Bier und du   Milch trinkst/trinke...
                because I   beer and you milk   drink.2SG/1SG
        c.   weil   wir das Haus und die Mullers den Garten kaufen...
                because we the house and the Mullers the garden buy.1PL/3.PL
                'because we are buying the house and the Mullers the garden...'

Pullum & Zwicky (1986) consider Right-Node Raising as a special case of factorable coordination. They confirm that syntactic conflicts between the conjuncts may be resolved by phonological identity. For example in English, the verb *are* is acceptable in (5b) because it has values consistent with both subjects.

(5)   a.   *Either they or I are/am/is going to have to go.
        b.   Either they or you are going to have to go.
        c.   *At present the project managers, but in the past the executive directors, set the research priorities. (Pullum & Zwicky (1986))

However, not all syncretic forms may be appropriate in such contexts. In (5c), the present and past forms of *set* are the same, but phonological identity is not sufficient, at least for some speakers. The tense feature in (5c) is meaningful and not syntactically imposed, whereas the person feature is triggered by agreement (5b). Pullum & Zwicky (1986) thus conclude that for a syntactic feature conflict to be resolved in a factorable coordination, the feature value must be "syntactically imposed on the factor", and "a phonological form is available [...] which is ambiguous between these values". Syncretic forms are thus an exception to the Principle of phonology-free syntax.

They have also been considered as a difficult challenge for unification-based grammars (Ingria (1990)) if underspecified features (PERS=2/3) have to be resolved when unification takes place: if *are* is resolved PERS=2 when combining

with *you*, how can it be resolved PERS=3 and combine with *they* ? Both LFG (Dalrymple & Kaplan (2000), Dalrymple et al. (2009)) and HPSG (Levy & Pollard (2002), Sag (2003)) have provided formal solutions, assigning syncretic forms a specific value, for example PERS= {2, 3}, instead of an underspecified one.

However, we have found cases without phonological syncretism in English and French peripheral ellipsis. This is problematic for RNR analyses assuming strict identity condition as well as for analyses giving special status to syncretic forms.

This paper is structured as follows. Section 2 provides corpus data which show the existence of verbal sharing without phonological identity in English peripheral ellipsis. Section 3 presents both corpus data and an acceptability judgment test which shows that syncretic forms do not have a special status in French peripheral ellipsis. Section 4 suggests that mismatch resolution may be due to closest conjunct agreement, and compares peripheral ellipsis with lexical coordination, and section 5 presents our HPSG analysis.

2   Verbal Mismatch in English Peripheral Ellipsis

Peripheral ellipsis, or Right-node raising (RNR), is exemplified in (6).

(6)   a.   John likes ~~bananas~~ but Mary dislikes *bananas*.
        b.   She learns how to relax them to accept ~~the entering object~~ -instead of contracting them to repel- *the entering object*.
              (Brown Corpus, Bîlbîie (2013))

As noted by Hudson (1976), Williams (1990), it is not restricted to coordination, as in (6b). It may also apply to non maximal constituents (7a) and even to wordparts (7b) (Chaves (2008)):

(7)   a.   It was a sweet ~~dog~~ and an intelligent *dog*. (SWB corpus)
        b.   These events took place in pre~~war Germany~~ or in post*war Germany*?

Chaves (2014) proposes a rule of backward deletion under phonological identity, with prosodic rather than syntactic constraints.

In case of peripheral verb ellipsis, Pullum & Zwicky (1986) observe the following contrast:

(8)   a.   *I certainly will ~~clarify the situation~~, and you already have *clarify/clarified the situation*.
        b.   I certainly will ~~set the record straight with respect to the budget~~ and you already have *set the record straight with respect to the budget*.

Although they note that *clarified* may be acceptable in (8a) for some speakers, they claim that only verbs such as *put*, *set*...with syncretic base and participle are fully grammatical in such environments. An informal Google search provides both examples with syncretic (9a) and non syncretic forms (9b):

(9)   a.   I encourage anyone who has ~~come across my presence~~ or who will *come across my presence* to never limit yourself. (thecashlayproject.com/post/4690385610)

        b.   Her publicist Max Clifford said: "I think she's going to be remembered as a young girl who has ~~saved an awful lot of lives~~, and who will, *save an awful lot of lives*". (news.bbc.co.uk/2/hi/entertainment/)

We conducted a corpus study, looking for coordinated clauses with a pronominal subject, or relative clauses, with conflicting auxiliaries, such as 'who has and who will', 'that will and that have'....In the COCA (520 million words), (Davies (2010)), we only found 3 relevant examples, all with non syncretic forms (10). In The English web corpus (19 billion words) (Baroni et al. (2009)), we only found 30 examples, again all with non syncretic forms (Table 1).

(10)   a.   The two teachers who have ~~encouraged me the most~~ and who continue to *encourage me the most* to follow my heart for photography are Mr. Thomas Collins and Mr. Andrew Shapiro. (PSA Youth Showcase, 2008, COCA)

        b.   We have ~~persevered~~ and we shall *persevere*, in no small measure because of the plucky brand of people true to these ideas. (USA Today Magazine, COCA)

This may be due to the fact that verbs with non syncretic base and participles outnumber by far those with syncretic forms.

Sequences	Number of occurrences (with syncretism)	Number of occurrences (without syncretism)
who have/has and/or who V + to inf	0	2
who have/has and who will + inf	0	14
who have/has or who will +inf	0	1
who have and who are - ing	0	5
who have or who are - ing	0	7
which have and which will	0	1
Total	0	30

Table 1: Verbal mismatch in RNR in English web 2013

Could cases such as (10) be analysed as cataphoric VP ellipsis as noted in Chaves (2014)? We assume that cataphoric VP ellipsis follows Langacker (1966)'s constraint on backward anaphora (11).

(11)   a. $Paul_i$ came and he_i was angry.

        b.   *He_i came and $Paul_i$ was angry.

        c.   When he_i came, $Paul_i$ was angry.

Thus cataphoric VP ellipsis only occurs in a subordinate contexts (12a) and coordinations such as (12b) should be analyzed as peripheral ellipsis.

(12)　　a.　If you can, you should come tomorrow.
　　　　b.　If you're scared, you can, and you should, leave now.
　　　　　　(Frank Gallagher, John M Del Vecchio, *The Bremer Detail*, 2014)

3　Syntactic Mismatch in French Peripheral Ellipsis

3.1　Previous Work on French Peripheral Ellipsis

Syntactic mismatch has been reported for indefinite determiners (13a) and weak prepositions (13b) in French Peripheral ellipsis (Abeillé & Mouret (2010), Abeillé et al. (2015)).

(13)　　a.　Il　　y　　a　　des　　langues　qui　　　　ont
　　　　　　There CLIT are INDF.PL languages REL.SUBJ have
　　　　　　une flexion casuelle　　et　des　　langues　qui　　　　n'
　　　　　　INDF.SG inflection case　and INDF.PL languages REL.SUBJ NEG
　　　　　　ont　pas　*de flexion　　casuelle*.
　　　　　　have NEG NPI inflection case.
　　　　　　'There are languages that have and languages that don't have case
　　　　　　inflection.' (Abeillé & Mouret (2010))
　　　　b.　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, Abeillé & Mouret (2010))

A positive verb form *ont* 'have' cannot take a direct object marked by *de*, which is only allowed by a negative verb form *n'ont pas* 'have not' in (13a). An infinitival complement after a verb like *parvenir* 'succeed' must be marked by *à*, which is missing in the periphery of (13b), since *souhaiter* 'wish' takes a bare infinitival complement. We thus conclude that RNR allows for the non identity of meaningless markers.

Voice mismatch has also been reported in French peripheral ellipsis (Abeillé et al. (2015), Shiraïshi et al. (2016)): in (14), the reflexive auxiliary *se sont* expects an active participle, whereas the passive auxiliary *ont été* requires a passive one.

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

Since past and passive participles are syncretic in French, as in English, this mis-

match does not challenge the phonological identity constraint on meaningful elements.

Corpus data for determiner, preposition and voice mismatch have been conformed by acceptability judgement tasks (Abeillé et al. (2015)).

3.2 Verbal Mismatch in French Peripheral Ellipsis

For French, we have tested relative clause coordination with a shared verbal form, and found feature mismatch without phonological syncretism. In (15), from a spoken corpus, *qui ont* 'who have' expects a past participle *vu* whereas *qui vont* 'who will' expects an infinitival *voir*.

(15)   ...une carte interactive de tous les sites   de production à grande
        ...a   map interactive of all   the facilities of production at large
        échelle qui   ont *vu le jour*, ou qui   vont *voir le jour*
        scale   REL.SUBJ have ~~seen the day~~, or REL.SUBJ will see the day
        dans les mois   qui   viennent en France.
        in   the months REL.SUBJ come   in France.
        '...an interactive map of large scale production facilities that have, or that
        will see the day in the months to come in France.'
        (France Inter, 2015/02/20)

Since we do not have large corpora annotated for ellipsis, we searched for coordinated relative clauses with conflicting auxiliaries in a web corpus (frtenten 2012, 10 billion words). We found 49 examples (table 2), out of which, only 27 (55 %) are syncretic forms.

(16)   a.   Parler de sujets scientifiques, des   innovations qui
              Talking of subject scientific,   INDF.PL innovations REL.SUBJ
              ont *impacté le quotidien du grand public*   ou qui
              have ~~impacted the dailylife of.DET.M.SG large public~~ or REL.SUBJ
              vont *impacter le   quotidien du   grand public*.
              will impact   the dailylife of.DEF.M.SG large   public.
              'Talking about scientific topics, innovations that have or that will impact the daily life of the public.'
              (http://www.cnrs.fr/centre-est)
        b.   Parmi les nominés, on retrouve les artistes qui   ont
              Among the nominees, we find   the artists REL.SUBJ have
              investi les scènes de France   ou qui   vont *investir les scènes*
              ~~invested the scenes of France~~ or REL.SUBJ will invest   the scenes
              de France.
              of France.
              'Among the nominees, we find the artists who have or who will invest the French scenes.'
              (www.etudiant-france.info)

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(16a) shows verbal mismatch with phonological identity, between the past participle *impacté* [ɛ̃pakte] and the infinitive *impacter* [ɛ̃pakte] 'impact', (16b) shows verbal mismatch without identity, since the past participle *investi* [ɛ̃vɛsti] is different from the infinitive *investir* [ɛ̃vɛstir] 'invest'. Both are from well written sites. In all cases, the feature conflict is resolved by the form required by the second conjunct.

One may wonder why the percentage of syncretic forms is much lower in English than in French: it may well be due to the lexical frequency of the relevant verbs: 90 % of French verbs belong to the 1st inflexion group (with -er infinitive and -é participle), while only about 20 English verbs have syncretic infinitival and participles (*come, cost, cut, hit, put, set...*).

Sequences	Number of occurrences (with syncretism)	Number of occurrences (without syncretism)
qui sont et/ou qui vont +inf (who are and /or who will + inf)	3	3
qui ont et/ou qui vont +inf (who have and/or who will +inf)	16	12
qui a et/ou qui va + inf (who have and/or who will +inf)	5	3
qui ont déjà et/ou qui vont + inf (who have already and/or who will + inf)	0	3
qui a déjà et/ou qui va +inf (who has already and/or who will +inf)	1	0
qui ont/a et/ou qui peuvent/peut +inf (who have/has and/or who can +inf)	1	1
qui ont et/ou qui doivent +inf (who have and/or who must +inf))	1	0
Total	27	22

Table 2: Verbal mismatch in RNR in frTenTen 2012

3.3   Testing French Data with an Experiment

We investigated whether verbal mismatch with or without phonological syncretism is acceptable in French peripheral ellipsis. We conducted an online acceptability judgment test, on the French RISC platform (http://www.risc.cnrs.fr/). 37 French native speakers from age 19 to 70, working in French Universities, rated the sentences from 0 to 10. We had 24 target items (12 items with syncretism, 12 items without), 13 control items and 24 fillers. The experimental materials are inspired from corpus examples. Target items have three conditions: ellipsis with mismatch (17a), (18a), no ellipsis (17b), (18b), ellipsis without mismatch (17c), (18c):

(17)   a.   Certaines agences immobilières ont déjà,   ou vont bientôt
              Certain   agencies estate   have already, or will soon
              fermer leurs portes.
              close   their doors.
              'Some estate agencies have already, or will soon close their doors.'

b. Certaines agences immobilières ont déjà fermé leurs portes,
Certain agencies estate have already closed their doors,
ou vont bientôt les fermer.
or will soon them close.
'Some estate agencies have already closed their doors, or will soon close them.'

c. Certaines agences immobilières ont déjà, ou auront bientôt
Certain agencies estate have already, or will have,
fermé leurs portes.
closed their doors.
'Some estate agencies just have, or will have soon closed their doors.'

(18) a. Quelques électeurs vont bientôt, ou ont peut-être déjà *rejoint*
Some voters will soon, or have perhaps already joined
le centre.
the center.
'Some voters will soon, or may have already joined the center.'

b. Quelques électeurs vont bientôt rejoindre le centre, ou l' ont
Some voters will soon join the center, or it have
peut-être déjà rejoint.
perhaps already join.
'Some voters will soon join the center, or may have already joined it'

c. Quelques électeurs auront bientôt, ou ont peut-être déjà
Some voters will-have soon, or have perhaps already
rejoint le centre.
join the center.
'Some voters will soon have, or may have already joined the center.'

Control items have tree conditions: grammatical (19a), ungrammatical with wrong verb form (19b), ungrammatical with wrong preposition (19c):

(19) a. Certains commerçants ont déjà ouvert leurs magasins.
Certain shopkeepers have already opened their stores.
'Some shopkeepers have already opened their stores.'

b. *Certains commerçants ont déjà ouvrir leurs magasins.
Certain shopkeepers have already open their stores.

c. *Le syndic cherche de régler ce problème de fuite.
The trustee tries of address this problem of leakage.

Figure 1 presents the average judgments in each condition. The data was analyzed using linear mixed-effects models. Items with ellipsis and mismatch are judged slightly less acceptable than non elliptical items (mean rate 7.8) but much more acceptable than ungrammatical controls (mean rate 3.5). There is no significant difference between ellipsis with and without mismatch. Furthermore, there is no significant difference between syncretic (mean rate 7) and non syncretic (mean

rate 6.9) mismatch.

The experiment suggests that syncretic forms do not have a special status in peripheral ellipsis in French and that peripheral ellipsis with verbal mismatch with and without syncretism should be integrated in the grammar.
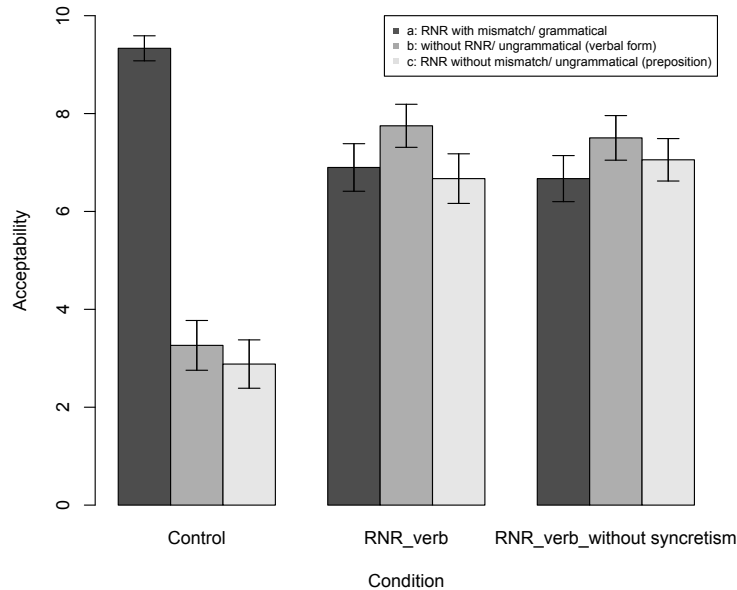
Figure 1: Results of the acceptability judgement (French). Error bars represent standard error.

4 Peripheral ellipsis and closest conjunct agreement

We hypothesize that closest conjunct agreement may interfere with peripheral ellipsis in our data. Closest Conjunct Agreement is the way some languages resolve feature conflict in nominal coordination (Corbett (1991), Sadler (1999), Yatabe (2004), Villavicencio et al. (2005)).

In French, Abeillé (2006) assumes that determiner coordination imposes identity on the shared elements, as in (20a), where *secrétaire* 'secretary' is a syncretic form for gender. But Shiraïshi (2014) has found numerous examples of determiner coordination with number or gender mismatch: in (20b), *travail* 'job' is the non syncretic plural of *travaux* 'jobs' and in (20c), *chanteuse* the non syncretic feminine of *chanteur* 'singer'.

(20) a. un ou une secrétaire
     INDF.M or INDF.F secretary.M/F

b. ...pour rediriger le   ou les   travaux vers leur nouvelle
    ...to   redirect DEF.SG or DEF.PL jobs   to   their new
    destination.
    destination.
    '...to redirect the jobs to their new destination.'
    (Gilles Lemaitre, *Backup exec pour Windows server: sauvegarde et restau*, 2007)

c. Il faut attendre que le,   ou la   chanteuse soit au
    It must wait   that DEF.M, or DEF.F singer   is   TO.DEF.SG
    top.
    top
    'One must wait until the singer is at the top.'
    (Bernard Tellez, *L'aube d'hiver de Barcelone*, 2010)

Looking at English auxiliary coordination, Mallinson & Blake (1981) observe that "proximity is an important factor in judgements of acceptability on agreement and government", with the following contrast (p. 202):

(21) a. ?Bill has and will underestimate the opposition.
      b. Bill has and, if I'm not mistaken which I rarely am, probably always will underestimate the opposition.
      c. Bill has and will upset the opposition.

They further note that "the control problem is neutralized by using a verb that has identical stem and past participle forms" as in (21c). They consider that the "desire to communicate" may win over grammatical constraints "particularly when the minor features of government and agreement are to some extent redundant" (p. 205).

We conducted a corpus search on lexical coordination of auxiliaries in English and French, using the same corpora and the same patterns as in sections 2 and 3. We found 79 examples of auxiliary coordination with verb mismatch in the COCA (table 3), compared to 3 with RNR. The percentage of syncretic forms (5 %) was higher than with RNR, but the non syncretic cases (95%) are too numerous to be considered as performance errors.

(22) a. Those demands have and will come into conflict with protection of river flows in national parks.
          (Ebba Hierta, *Rivers at risk.*,1995)
      b. all of them have or will become something other than Leninist...
          (Journal of International Affairs, 1991)

(22) are cases of syncretism. Non syncretic cases occur both in spoken (23a) and well written genre (23b).

(23) a. And Jan is a very strong Christian woman, and so God has really— has and will carry her through this. (ABC, 1999/08/20)

    b.   the strength of the city's tourism industry and the recent rise in visitors has and will continue to play a major role. (USA Today, 2010/04/27)

In French, we found 238 cases of auxiliary coordination with verb mismatch (table 4). The percentage of syncretic forms (72%) was higher than for RNR, suggesting that distance may play a role.

(24)   a.   La réolution a   ou va gagner.
                The revolution has or will win.
                'The revolution has or will win.' (europeecologie.eu, 2012/02/22)

         b.   De   2009 à 2012, de   vraies révolutions ont et   vont voir
                From 2009 to 2012, INDF.PL real   revolutions have and will see
                le jour sur Internet chez BNP Paribas.
                the day on Internet at   BNP Paribas.
                'From 2009 to 2012, real revolutions have and will see the light on the Internet at BNP Paribas.'
                (epargnebourse.com, 2012/02/23)

(25)   a.   Sans   oublier   deux autres frontrunners que   McCain a
                Without forgetting two other frontrunners REL.OBJ McCain has
                ou va   rencontré/er
                or will met/meet.
                'Without forgetting two other frontrunners who McCain has or will meet.'
                (Le Figaro, 2012/04/03)

         b.   Le Tea Party a   et va redéfinir le paysage   politique
                The Tea Party has and will redefine the landscape political
                américaine et   forcer les Républicains à retrouver leur valeurs
                american   and force the Republican   to regain   their values
                conservatrices.
                conservative.
                'The Tea Party has or will redefine the American political landscape or force the Republicans to regain their conservative values.'
                (Le Figaro, 2012/02/24)

(24a) is an example of mismatch with syncretism (*gagné* / *gagner*) 'win' and (24b) without (*vu* / *voir*) 'see'. (25a) is an example with an innovative disjunctive spelling, showing that the writer is aware of the feature conflict. (25b) is an example with a conjunction of two shared verbal complements: a non syncretic one (*redéfini* / *redéfinir*) 'redefine' followed by a syncretic one (*forcé* / *forcer*) 'force'. The results are summarized in tables 3 and 4.

Sequences	Number of occurrences (with syncretism)	Number of occurrences (without syncretism)
will and/or have/has + psp	0	3
have/has and/or will + inf	4	54
shall and/or have/has + psp	0	0
have/has and/or shall + inf	0	0
is/are +-ing and/or have/has	0	2
have/has and/or is/are + -ing	0	16
Total	4	75

Table 3: Verbal mismatch in lexical coordination in COCA

Sequences	Number of occurrences (with syncretism)	Number of occurrences (without syncretism)
est et/ou va +inf (is and/or will +inf)	10	7
sont et/ou vont +inf (are and/or will +inf)	29	20
a et/ou va+inf (has and/or will+inf)	74	13
ont et/ou vont+inf (have and/or will+inf)	10	3
a et/ou peut+inf (has and/or can+inf)	2	1
ont et/ou peuvent +inf have and/or can +inf	2	1
a et/ou doit +inf (has and/or must +inf)	3	0
ont et/ou doivent +inf (have and/or must +inf)	2	0
Total	171	67

Table 4: Verbal mismatch in lexical coordination in frTenTen 2012

5   An HPSG Analysis of Peripheral Ellipsis

Previous analyses of peripheral ellipsis in terms of movement (Ross (1967)), multiple dominance (McCawley (1982)) or deletion do not lead one to expect verbal mismatch between the missing material and the shared material.

In HPSG, Yatabe (2001, 2012), Crysmann (2003), Beavers & Sag (2004) propose linearization-based analyses of RNR, and Chaves (2014) and Abeillé et al. (2015) a unary deletion rule. These analyses suppose phonological identity between the elided and the right peripheral elements. In LFG, Maxwell & Manning (1996) and Kuhn et al. (2010) propose a non-constituent coordination analysis, which does not take into account the possibility of mismatch either.

We follow Chaves (2014) in assuming that an RNR rule can target morphophonological units in Morphophonology (MP). According to Chaves (2014), morphophonological units can be deleted under identity of the FORM feature which lists morph form. However, the data in section 2 and 3 suggest that FORM mismatch is acceptable in English and French as shown in (26).
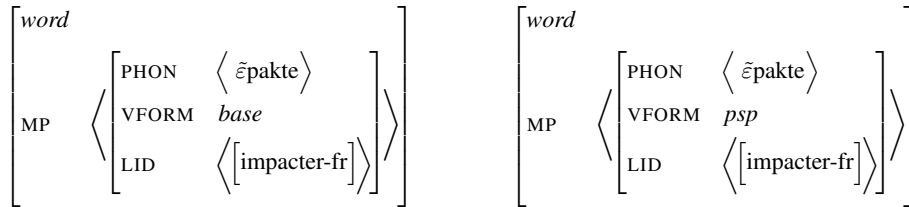
(26) a. ⟨We have⟩ ⟨~~persevered~~⟩ ⟨and we shall⟩ ⟨persevere⟩
      b. ⟨ont déjà⟩ ⟨~~ouvert leur portes~~⟩ ⟨ou vont bientôt⟩ ⟨ouvrir leur portes⟩

The existence of RNR without phonological syncretism shows that lexeme identity plays an important role. In RNR without phonological syncretism, the past participle and the infinitive share the same lexeme. Homonyms cannot be shared as shown in (27): *bat* cannot be both the baseball instrument and the animal. *volé* cannot be shared as stolen and flown at the same time.
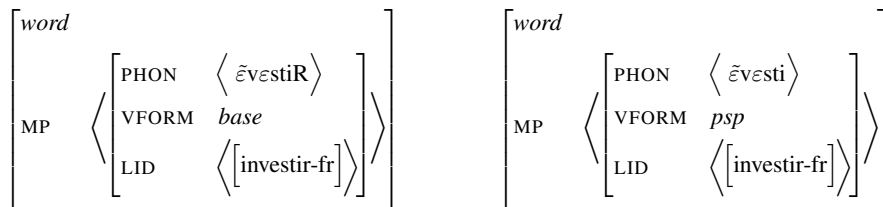
(27) a. #Robin swung and Leslie tamed *an unusual bat.*
          (Levine & Hukari (2006))
      b. #On a   des   avions qui   ont et des   accusés
          We have INDF.PL planes REL.SUBJ have and INDF.PL defendants
          qui   n' ont pas *volé.*
          REL.SUBJ NEG have NEG flown/stolen.

We assume that the feature MP includes PHON, VFORM and LID. Lexeme identity can be captured by the LID feature. The LID feature is used to individuate lexical items semantically: it includes a list of semantic frames that canonically specify the meaning of a lexeme (Sag (2012)). Identity between the infinitive and the past participle can be captured by LID. (28) shows the lexical entries for the infinitive *impacter* and the past participle *impacté* 'impact'. (29) shows the lexical entries for the infinitive *investir* and the past participle *investi* 'invest'.

(28) Infinitive *impacter* and past participle *impacté* with syncretism:

$$
\begin{bmatrix} word \\ \text{MP} \quad \left\langle \begin{bmatrix} \text{PHON} & \langle \tilde{\varepsilon}\text{pakte} \rangle \\ \text{VFORM} & base \\ \text{LID} & \langle [\text{impacter-fr}] \rangle \end{bmatrix} \right\rangle \end{bmatrix}
\qquad
\begin{bmatrix} word \\ \text{MP} \quad \left\langle \begin{bmatrix} \text{PHON} & \langle \tilde{\varepsilon}\text{pakte} \rangle \\ \text{VFORM} & psp \\ \text{LID} & \langle [\text{impacter-fr}] \rangle \end{bmatrix} \right\rangle \end{bmatrix}
$$

(29) Infinitive *investir* and past participle *investi* without syncretism:

$$
\begin{bmatrix} word \\ \text{MP} \quad \left\langle \begin{bmatrix} \text{PHON} & \langle \tilde{\varepsilon}\text{v}\varepsilon\text{stiR} \rangle \\ \text{VFORM} & base \\ \text{LID} & \langle [\text{investir-fr}] \rangle \end{bmatrix} \right\rangle \end{bmatrix}
\qquad
\begin{bmatrix} word \\ \text{MP} \quad \left\langle \begin{bmatrix} \text{PHON} & \langle \tilde{\varepsilon}\text{v}\varepsilon\text{sti} \rangle \\ \text{VFORM} & psp \\ \text{LID} & \langle [\text{investir-fr}] \rangle \end{bmatrix} \right\rangle \end{bmatrix}
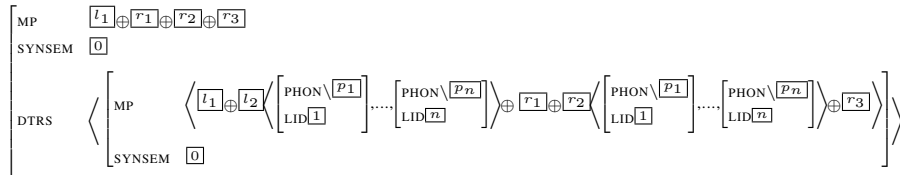$$

We also assume that the LID values of the past participle and the passive participle are the same and the mismatch between the active and the passive as shown in (14) can also be explained.

We posit a RNR unary deletion rule as follows. The rule states that the elements with the same LID value can be elided in the first conjunct. Thus the shared

elements are always those expected by the second conjunct.

(30)   *rnr - phrase* ⟶

$$
\begin{bmatrix}
\text{MP} & \boxed{l_1} \oplus \boxed{r_1} \oplus \boxed{r_2} \oplus \boxed{r_3} \\
\text{SYNSEM} & \boxed{0} \\
\\
\text{DTRS} & \left\langle \begin{bmatrix} \text{MP} & \left\langle \boxed{l_1} \oplus \boxed{l_2} \left\langle \begin{bmatrix} \text{PHON} \backslash \boxed{p_1} \\ \text{LID} \boxed{1} \end{bmatrix}, ..., \begin{bmatrix} \text{PHON} \backslash \boxed{p_n} \\ \text{LID} \boxed{n} \end{bmatrix} \right\rangle \oplus \boxed{r_1} \oplus \boxed{r_2} \left\langle \begin{bmatrix} \text{PHON} \backslash \boxed{p_1} \\ \text{LID} \boxed{1} \end{bmatrix}, ..., \begin{bmatrix} \text{PHON} \backslash \boxed{p_n} \\ \text{LID} \boxed{n} \end{bmatrix} \right\rangle \oplus \boxed{r_3} \right\rangle \\ \text{SYNSEM} & \boxed{0} \end{bmatrix} \right\rangle
\end{bmatrix}
$$

The MP list of the Daughter is divided into 5 sublists, which must obey prosodic constraints, which we ignore here. The first sublist $\boxed{l_1}$ is kept. The deleted list is $\boxed{l_2}$: it must comprise elements with the same LID as $\boxed{r_2}$. Note that the elements in $\boxed{l_2}$ are not preserved in the MP list of the mother. Thus the forms of the peripheral elements $\boxed{r_2}$ is always that required by the second conjunct. $\boxed{r_1}$ is the sublist before the shared elements and may comprise a coordinating conjunction.The extra $\boxed{r_3}$ list accounts for Right-node Wrapping as in (31) and can be empty. The rule in (30) works as shown in Figure 2.

(31)   a.   I've got friends in low places, where the whiskey drowns ~~my blues~~ and the beer chases *my blues* away. (Whitman (2009))

        b.   des   églises   qui   se   sont   ~~rattachées à Rome~~   ou
               INDF.PL   churches REL.SUBJ REFL   AUX   ~~attached to Rome~~   or

               qui   ont été   *rattachées à Rome* par la   force
               REL.SUBJ have been attached   to Rome by the force
               'churches who have or who have been attached to Rome by force '
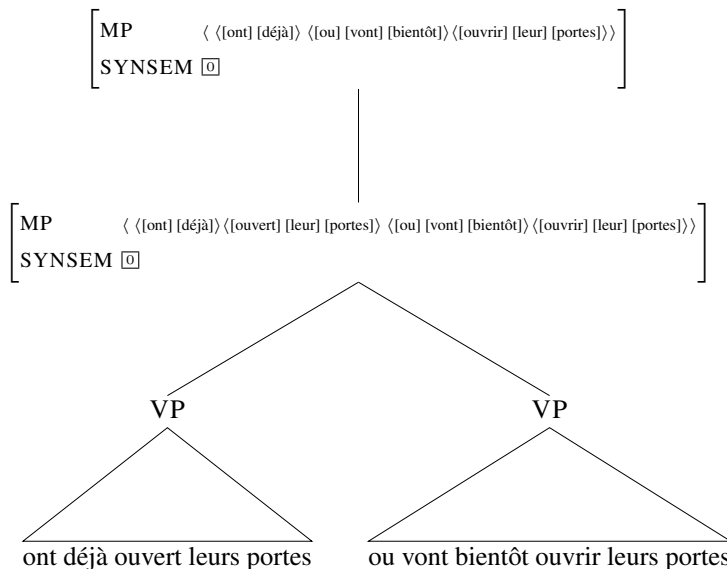   (Abeillé et al. (2015))

$$
\begin{bmatrix}
\text{MP} & \langle\ \langle[\text{ont}]\ [\text{déjà}]\rangle\ \langle[\text{ou}]\ [\text{vont}]\ [\text{bientôt}]\rangle\ \langle[\text{ouvrir}]\ [\text{leur}]\ [\text{portes}]\rangle\ \rangle \\
\text{SYNSEM} & \boxed{0}
\end{bmatrix}
$$

$$
\begin{bmatrix}
\text{MP} & \langle\ \langle[\text{ont}]\ [\text{déjà}]\rangle\ \langle[\text{ouvert}]\ [\text{leur}]\ [\text{portes}]\rangle\ \langle[\text{ou}]\ [\text{vont}]\ [\text{bientôt}]\rangle\ \langle[\text{ouvrir}]\ [\text{leur}]\ [\text{portes}]\rangle\ \rangle \\
\text{SYNSEM} & \boxed{0}
\end{bmatrix}
$$

VP — ont déjà ouvert leurs portes

VP — ou vont bientôt ouvrir leurs portes

Figure 2: French RNR with non syncretic verb mismatch

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6 Conclusion

In this paper, we have offered evidence that lexematic identity may be sufficient in peripheral ellipsis. Contrary to what has usually been assumed since Pullum & Zwicky (1986), corpus data indicates the existence of verbal mismatch without phonological syncretism in both French and English Right node raising. An acceptability judgment test suggests that verbal mismatch with and without phonological syncretism is as acceptable as without mismatch in French peripheral ellipsis. A possible explanation is that a principle of closest conjunct agreement overrides the identity constraint. We indeed find lexical coordination of auxiliaries with verb mismatch in both English and French. Following Chaves (2014), we adopt a deletion-based analysis of peripheral ellipsis. But we reformulate the constraint on the shared material in terms of LID feature identity.

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