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Past participle agreement in French – one or two rules?

Abstract: Past participle agreement in French has been taken to be conditioned (among other factors) by movement of the internal argument out of the VP, i.e. as a reflex of movement. However, drawing on data that have been neglected so far in the formal literature on the topic (Lahousse 2011), we show that this characterization is in part misguided: past participle agreement is also possible with *in-situ* internal arguments of unaccusative/passive verbs (that combine with the perfect auxiliary *être*), and hence cannot generally be considered a reflex of movement. We argue that a unified analysis of all past participle contexts in French is not only difficult – the sole attempt at a uniform analysis of a very similar pattern in Italian by D'Alessandro and Roberts (2008) cannot be extended to French – but also undesirable, because past participle agreement in contexts with the auxiliary *avoir* differs in a number of properties compared to past participle agreement in contexts that require the auxiliary *être.* We thus argue that past pasticiple agreement in French is in fact not a homogeneous phenomenon but results from two different mechanisms: agreement between the past participle and the internal argument in its base position (not in a Spec-head configuration as is usually assumed), or from resumption (following a suggestion by Boeckx 2003).

1 Introduction

A well-studied phenomenon in the morphosyntax of Romance languages is past participle agreement (PPA): in sentences with a perfect or passive auxiliary, the past participle can (and sometimes must) agree in (a subset of) *phi*-features with an ar-

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gument. In this paper we will reconsider PPA in French and argue that despite the intensive research on this phenomenon, a comprehensive integration even of the basic facts in a formal analysis is still lacking. In particular, we will argue that a unified analysis of PPA under the auxiliaries *avoir* and *être* is not only difficult, but actually undesirable, since PPA has different properties in these contexts. Hence, we claim that PPA under *avoir* has a different status / source than PPA under *être*.

The paper is structured as follows: in the remainder of section 1 we will remind the reader of the distribution of PPA in French. Furthermore, we show that important facts in the context of the auxiliary *être*, though available in the descriptive literature, have not been considered in formal analyses of PPA; in fact, these data are unexpected in previous approaches. Section 2 summarizes the main ideas of existing analyses and points out their shortcomings. In section 3 we argue, based on a whole series of corpus facts, why, in our view, PPA in French is not a unified phenomenon and should be considered the result of two different syntactic mechanisms. In section 4 we present a formal implementation of these ideas. Finally, section 5 concludes.

From a descriptive point of view, the rules of PPA in standard French can be formulated as follows, in the terminology of Relational Grammar (following e.g. Perlmutter & Postal 1983):

"Accordo del PP in francese
Sia *b* una proposizione, *a* un nominale di *b* e *p* un participio passato di una forma verbale perifrastica di *b*. *p* si accorda in genere e numero con *a* se e solo se:
  I.   la proposizione è finalmente intransitiva [= internal argument is not in its post-verbal base position].
  II. *a è legittimato al controllo dell'accordo.*
       Un nominale è legittimato al controllo dell'accordo sse:
       (a) non è chômeur [= a is in an argument position]
       (b) è il 2 inizializzato da *p* [= is the internal argument of *p*]. "
(Loporcaro 1998: 53)[1]

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[1] ,Past participle agreement in French
With *b* being a clause, *a* a nominal in b and *p* a past participle as part of a periphrastic verb form of *b*, *p* agrees in gender and number with *a* if and only if:
  i.   the clause is intransitive […].
  ii.   a is entitled to control the agreement.
        a nominal is entitled to control the agreement iff:
        (a) it is not a *chômeur* […]
        (b) it is the initial 2 of *p* […].' (our translation).

II(a) in the Italian quote above can be translated as "*a* is in an argument position" and II(b) as "*a* is the internal argument of *p*". Generally, in a pan-Romance perspective and still following the observations in Loporcaro (1998), two factors determine past participle agreement in Romance: auxiliary selection (*être*, `to be', with unaccusatives (3), passives (2a), reflexive constructions; *avoir*, `to have', with unergative verbs and active-transitive constructions), and, in the case of active-transitive constructions, *linear order* between past participle and internal argument (DP_{int}). In French, PPA is only possible in this context when DP_{int} linearly precedes the past participle, i.e. when DP_{int} has left its base position inside the VP because it has undergone cliticization, *wh*-movement, or relativization ((4a) and (4b) vs. (1) and (2b)). Moreover, whenever there is agreement with the subject, *être* is chosen in standard French (cf. Stark & Riedel 2013: 119).

1. Pierre a   donné la   pomme à Jean.
   Pierre has given the apple   to John   (active-trans., DP_{int} *in-situ*, no PPA)
2. a. *La pomme a   été   donné-**e**   à   Jean.*
      the apple   has been given-FEM.SG to   John   (passive, PPA with preposed DP_{int})
   b. *Pierre a   donné la   pomme à Jean.*
       Pierre a has given   the apple   to John   (active-trans., DP_{int} *in-situ*, no PPA)
3. *Marie est arrivé-**e**.*
   Marie is arrived- FEM.SG   (unaccusative, PPA with preposed DP_{int})
   a. *Pierre l'a   donné-**e**   à Jean.*
      Pierre it-has given- FEM.SG to John   (active-trans., PPA with cliticized DP_{int})
   b. *la   pomme que Pierre a   donné-**e**   à Jean.*
      the apple   that Pierre has g iven-FEM.SG to John
                                                     (active-trans., PPA with relativized DP_{int})
4. a. *Combien   de pommes Pierre a-t-il   pesé-es?*
      *ho*w.many of apples   Pierre has-L-he weighed-FEM.PL
                                                     (active-trans., PPA with *ex-situ wh*-DP_{int})
   b. *Pierre a   pesé   combien   de pommes?*
      Pierre has weighed how.many of apples (active-trans., no PPA with *in-situ wh*-DP_{int})

Looking for a potential `function', in semantic-pragmatic terms, of past participle agreement in Romance and especially standard French (cf. Stark 2013), one might assume that this kind of agreement functions as a `signal' for reduced transitivity (cf. Kayne 1989: internal argument in Spec AgroP = `object conjugation', Blanche-Benveniste 2006, Loporcaro's 1998: first condition). This could be so since the subject of a sentence with past participle agreement is very often a theme (patient), not

of a higher thematic role (e.g. agent), i.e. there is no DP externally merged in Spec*v*P (cf. examples (2a), (3) against (1) and (2b), also Belletti 2017: chapter 5.1). However, that evidently only holds for past participle agreement in constructions with *être*. Subjects in past participle agreement constructions with *avoir* are agents (examples (4a) and (4b)), and still, we have agreement (not with the subject, but with the *preceding, never the following,* internal argument).

It is indisputable that linear order plays a role in the presence/absence of PPA in contexts with the auxiliary *avoir* in French. However, for some reason, the linear order factor has also been taken to be operative in cases where the auxiliary is *être.* Looking at the relevant passive and unaccusative examples in (2a) and (3) above, we can see that the PPA controlling argument, an underlying internal argument, has undergone movement and thus precedes the past participle. Indeed, this reordering of DP_{int} takes place in the vast majority of contexts where the auxiliary *être* is used. This is because there is only a single argument in the structure with unaccusative/passive verbs, and since French has the EPP-property (the derived subject position SpecT must be filled), this sole argument is often the only candidate to fulfill the EPP, and it thus moves out of the VP. But the reason for this displacement of DP_{int} is the EPP, it is not in any way triggered by the choice of the auxiliary or the presence of PPA. Nevertheless, in virtually all formal analyses of French PPA, the phenomenon is assumed to be conditioned by the preposing of DP_{int} – regardless of the choice of the auxiliary. Indeed, PPA is mostly treated as a *reflex* of DP_{int}-movement (see among others Belletti 2006, Déprez 1998, Kayne 1985). Put differently, movement of DP_{int} is considered a necessary factor for PPA to occur (though not always a sufficient condition), and this is what unifies PPA-contexts with *avoir* and *être*.

However, this is not true. The generalization holds for cases with the auxiliary *avoir*, but not for contexts that require *être*. As shown in Fender (2002) and Lahousse (2011: 184,186), there are contexts (called inversion constructions) in which DP_{int} of passive / unaccusative v can actually stay *in-situ* because the EPP-property is satisfied by a different XP or is not satisfied at all (on the surface), and still there must be PPA with DP_{int}, see (5) and (6):

5. a. U*ne épreuve sera   présenté-**e**   à chaque candidat*.
       a   test   be.FUT.3sg presented-**FEM.SG** to each   candidate
       `A test will be presented to each candidate.'
    b. *A chaque candidat sera   présenté-**e**   une épreuve*.
       to each   candidate be.FUT.3SG presented- **FEM.SG** a   test
       `Each candidate will be presented a test.'
6. a. Je voudrais   que soient   inscrit-s   tous les enfants de Marie
       I   would.like that be.SUBJ.3PL enrolled-**PL** all   the children of Marie

   b. **Je voudrais   que soient   tous inscrit-**s**   les enfants de Marie.*
      I would.like that be.SUBJ.3PL all   enrolled-PL the children of Marie
      `I would like that all children of Marie are enrolled.'

Crucially, Lahousse (2006, 2011) provides evidence that DP_{int} in the inversion constructions (5b) and (6a) is indeed in its base position: for example, this is suggested by the fact that quantifier float is impossible in (6b), and that the preferred reading in (5b) is a narrow scope reading of the existential quantifier in the scope of the universal quantifier in the indirect object *A chaque candidat* – which follows naturally if *une épreuve* is positioned lower in the syntactic structure. The latter observation also renders implausible a generalized assumption of right dislocation with a null clitic for these structures as sketched in Kayne (1989, Belletti 2017) for PPA with *avere* with *in-situ* direct objects in some Italian dialects. These facts show that displacement of DP_{int} (the linear order factor) is *not* a necessary condition for PPA (with the auxiliary *être*). Consequently, PPA in French cannot in general be described and analyzed as a reflex of movement; at least, the connection to movement of DP_{int} only holds for contexts with the auxiliary *avoir*.[2] For some reason, these facts have not been considered in the formal literature on PPA in French (see section 2 for further discussion).

   Finally, note that the difference between *avoir-* and *être*-contexts with respect to the importance of the linear order factor leads us to the preliminary conclusion (to be expanded in section 3) that we are in fact dealing with two different rules which underlie standard French PPA: one is based on linear order (agreement in constructions with *avoir* with preceding clitics or *wh*-marked elements), something that is not in itself exotic (Corbett 2006: 199-200, see the remarks on subject-verb vs. verb-subject agreement in number in Slavonic, a phenomenon also found in many Romance varieties, e.g. non-standard Brazilian Portuguese), while the other one is not. The aim of our paper is to provide more arguments that PPA with *avoir* and *être* is not a unified phenomenon since the two constructions at issue differ in a number of properties, and to provide a formal analysis for both subtypes of PPA that derives these properties.

[2] In earlier stages of French (Old French, see Dupuis 1992) and Italian as well as in some modern Romance varieties (e.g. in Catalan, Brown 1988) one can also find PPA with an *in-situ* internal argument of an active transitive verb. See Legendre (2017) for an overview of PPA-patterns in Romance.

2 Previous analyses of (French) PPA

Most existing formal analyses of PPA (Belletti 2006, Bouchard 1987, Branigan 1992, Déprez 1998, Drijkoningen 1999, Friedemann & Siloni 1997, Kayne 1985, 1989, Lefebvre 1988, Lois 1990 and Obenauer 1992) are formulated on the assumption that PPA only occurs when an internal argument undergoes movement out of VP. Thus, they mostly take PPA to be a reflex of movement.[3] As we have seen, this does not describe the whole pattern since it ignores the fact that PPA is possible with an *in-situ* DP_{int} of an unaccusative v in French (and Italian). As already noted in Bouchard (1987), Sportiche (1990), Déprez (1998), and Boeckx (2003), this pattern is totally unexpected in existing analyses which basically treat PPA as the consequence of a Spec-head-agreement relation between the participle head (a functional verbal projection) and DP_{int}, following the seminal analysis by Kayne (1989). Furthermore, even in the *avoir*-contexts where PPA co-occurs with DP_{int}-movement, it cannot simply be equated with a reflex of movement as noted in Branigan (1992) and Boeckx (2003). Reflexes of XP-movement have been shown to exhibit three patterns cross-linguistically with respect to their distribution across clauses under long-distance movement of an argument (see Georgi 2014, 2017): they occur in all clauses of the dependency, only in the clause in which the moved XP surfaces, or only in the clauses crossed by XP but in which XP does not surface. However, French PPA shows a different pattern: if DP_{int} undergoes long extraction, PPA can only occur in the lowest clause of the dependency, viz. in the clause in which DP_{int} has its θ-position, see (7).

7.   a. *La lettre qu'-il   a   dit(*-**e**)   que Pierre lui a   envoyé*(-**e**)*
       the letter which-he has said-**FEM.SG** that Pierre him has sent-FEM.SG

                                                     (Chomsky 1995: 325)

     b. *Quelles chaises as-tu   dit(*-**es**)   qu'-il   a   repeint*(-**es**)*
       which   chairs   have-you said-FEM.PL that-he has repeinted-FEM.PL

                                                     (Grohmann 2003: 287)
     c. *Combien   de fautes   Jean a-t-il   dit(*-**es**)   que Paul a   fait(-**es**)?*

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[3] More recent Minimalist approaches to PPA do not consider PPA to be directly triggered by move-ment, viz. the result of Spec-head-agreement. Rather, they postulate a downward Agree relation (in strict parallel to subject-verb agreement) where the participle head probes for its goal (the internal argument) inside the VP, see Chomsky (2001), D'Alessandro & Roberts (2008, see below), Belletti (2017: ch.3), Longenbaugh (2019). Thus, past participle agreement with *avoir* needs, as opposed to past participle agreement with *être*, additional or different conditions, i.e. independently motivated preposing of the object DP (because of *wh*-movement or its clitic status, Belletti 2006, Kayne 1989).

how-many of   mistakes John has-L-he said-FEM.PL   that Paul has done-FEM.PL

(Boeckx 2003: 60)

This is another argument for not treating PPA as a reflex of movement even in contexts with *avoir*.[4]

The only comprehensive analysis of PPA that aims to cover both PPA with *avoir* (requires movement of DP_{int}) and *être* (independent of DP_{int}-movement) by the same mechanism is proposed in D'Alessandro & Roberts (2008, henceforth D&R) for standard Italian (with a very similar PPA-split). In their analysis, D&R adopt the clause structure in (8) for clauses with periphrastic tenses, illustrated for a transitive verb (p.481):

8. $[_{vP}\ v_{Aux}\ [_{vPrtP}\ DP_{ext}\ [_{vPrt'}\ v_{Prt}\ [_{vP}\ V\ DP_{int}\ ]]]]$

The head v_{Prt} merges with VP and introduces the external argument (DP_{ext}). The auxiliary is hosted by v_{Aux}, a raising predicate that attracts the structurally closest argument to its specifier. D&R (2008) assume that active transitive V in Italian moves to v_{Prt} to pick up the inflectional features on the latter. Evidence for this movement comes from the placement of certain manner adverbs and floated quantifiers attached to the VP that follow the past participle, see the examples in (11). For unaccusative/passive contexts, the movement of V is optional (cf. Cinque 1999, Guasti & Rizzi 2000). For D&R (2008), PPA is the result of a downward Agree relation between v_{Prt} (the probe) and DP_{int} (the goal) in the syntax. v_{Prt} bears an unvalued *phi*-probe that seeks gender and number values on DP_{int}. This Agree relation always takes place. Whether the valued features on v_{Prt} are morphophonologically realized (= PPA) or not (= absence of PPA) is regulated in the postsyntactic morphological component by the condition in (9).

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[4] Several analyses of the special French PPA-pattern under long movement have been proposed. Two main ideas are pursued: (a) there is no movement to the relevant specifier (Specv / SpecAgrO) in clauses other than the one where DP_{int} has its base position and hence no Spec-head-agreement (see Branigan 1992, Grohmann 2003); instead, cross-clausal movement proceeds from SpecC of the embedded clause directly to SpecC of the next higher clause. (b) DP_{int} targets Specv / SpecAgrO only in the lowest clause of the dependency, while in higher clauses it adjoins to the projection of the participle head (an A'-position), and agreement (an A-relation) is impossible with adjuncts (cf. Chomsky 1995: 325f., following a suggestion in Kayne 1989). The latter is a pure stipulation to get the facts right, while the first is dubious given the ever-growing body of literature on movement reflexes that occur in the vP-domain (see among others Urk forthcoming and Korsah & Murphy 2019 for recent overviews). See also Georgi (2014: ch.4.3.) for a more detailed discussion of previous approaches to the long-movement PPA-pattern in French.

9. Given an Agree relation A between probe P and goal G, morphophonological agreement between P and G is realized if P and G are contained in the complement of the minimal phase head H. XP is the complement of a minimal phase head H if there is no distinct phase head H^0 contained in XP whose complement YP contains P and G.

According to (9), PPA (= the valued *phi*-features on v_{Prt}) is only realized on v_{Prt} if the probe (= v_{Prt}) and the goal (= DP_{int}) are contained in the same spell-out domain of the minimal phase head. Phase heads are transitive active v and C (but no other heads, especially not unaccusative/passive v). They trigger the spell-out of their complements once they have projected a phrase (Chomsky 2000, 2001). Combined with the aforementioned assumptions, the PPA-pattern of Italian is derived as follows: (i) Active transitive verb, DP_{int} stays *in-situ*: V raises to v_{Prt}, v_{Prt} is a phase head, and DP_{int} stays inside VP. Hence, the probe v_{Prt} and the goal DP_{int} are not in the same spell-out domain: the complement of the minimal phase head v_{Prt} is the VP, but VP only contains the goal, not the probe. Thus, the *phi*-features on v_{Prt} remain unpronounced, there is no PPA. (ii) Active transitive verb, DP_{int} undergoes movement (e.g. cliticization): again, V raises to v_{Prt} and v_{Prt} is a phase head. But crucially, DP_{int} leaves its base position and attaches to v_{Aux} (= cliticization). As a consequence of DP_{int}-movement, the probe v_{Prt} and the goal are in the same spell-out domain, viz. in the complement of the next higher phase head C. Transitive v_{Prt} is always in C's spell-out domain, DP_{int} becomes part of it when it moves out of VP. As a consequence, the *phi*-features of v_{Prt} are morphologically realized as PPA. (iii) Unaccusative/passive verb: V optionally moves to v_{Prt}. Crucially, unaccusative v_{Prt} is not a phase head – the next higher phase head is C. Thus, whether DP_{int} undergoes movement or not, both the probe v_{Prt} and the goal are part of the same spell-out domain (= TP, complement of C). As a result, the *phi*-features on v_{Prt} are morphologically realized (= PPA).

There are several aspects of this approach to PPA in Italian that strike us as problematic, either in general or with respect to extending the proposal to French PPA: (a) phase status of unaccusative v: Legate (2003) provides a number of empirical arguments (reconstruction, quantifier raising, parasitic gaps) that show that the specifier of unaccusative v serves as an intermediate landing site for movement, just like the specifier of transitive active v. Hence, unaccusative v must also be a phase head (see also the references in Richards 2011 for more work that comes to the same conclusion). But if v_{Prt} is always a phase head, we should not see PPA with an *in-situ* DP_{int} of an unaccusative verb in D'Alessandro & Roberts' analysis (2008) (only the goal is in the complement domain of v_{Prt}), contrary to the facts.

(b) V-movement: in D&R's (2008) account of PPA, (at least active transitive) V has to move to v_{Prt} to pick up the inflection (PPA). However, in French no such movement takes place; the participle always follows the crucial class of manner adverbs, unlike in Italian, see examples (10) and (111) as opposed to (12) and (13). If V does not move in French, we should never see PPA show up on V (unless one postulates additional postsyntactic operations to bring the inflection and V together, e.g. Local Dislocation à la Embick & Noyer 2001).

10. a. *Hanno   accolto   bene il   suo spettacolo*.
       have.3PL received well   the his   performance
    b. **Hanno   bene accolto   il   suo spettacolo.*
        have.3PL well   received the his   performance
11. a. *Questo genere di spettacoli   è   sempre stato bene accolto*.
        this   kind   of performances be.3SG always been well received
    b. *Questo genere di spettacoli   è   sempre stato accolto   bene.*
        this   kind   of performances be.3SG always been received well
12. a. *Ils   ont   bien accueilli son spectacle*.
       they have.3PL well received his performance
    b. **Ils   ont   accueilli bien son spectacle.*
        they have.3PL received well   his performance
13. a. *Ce genre de spectacle   a   toujours été   bien accueilli*.
        this kind   of performance have.3SG always   been well received
    b. **Ce genre de spectacle   a   toujours été   accueilli bien*.
        this kind   of performance have.3SG always   been received well (cf.
    Cinque 1999: 102-103)

(c) A'-movement of DP_{int}: D&R (2008) illustrate PPA triggered by DP_{int} movement with cliticization (A-movement) to the relatively low position v_{Aux}. This leads to PPA since DP_{int} moves to the same spell-out domain in which v_{Prt} is located (= TP, domain of the phase head C). If, however, DP_{int} undergoes A'-movement to SpecC, it is no longer in C's spell-out domain, unlike v_{Prt}. Hence, A'-movement (*wh*-movement, relativization) should *never* trigger PPA in D&R's account. In fact, this is true for Italian. However, it is not for (standard) French, where A'-movement of DP_{int} can trigger PPA, see (3b) and (4a).

(d) the role of copies/traces: a way to avoid this problem in French and to have A'-movement trigger PPA in D&R's approach would be to take into account not the terminal landing site of the moved DP_{int} (SpecC) but rather intermediate landing sites of successive-cyclic movement (cf. Chomsky 1986 et seq.). The intermediate landing site of A'-movement would be in $Specv_{Prt}$. The intermediate copy in $Specv_{Prt}$ is in the

same spell-out domain as v_{Prt}, viz. in TP, and could thus trigger realization of PPA. The same logic could be used to solve another problem in D&R's system that the authors themselves mention: subject-verb-agreement (SV-Agr) should be suspended when the subject undergoes (local or long-distance) A'-movement since the subject in its landing site SpecC is no longer in the same minimal spell-out domain as the probe on the head T (domain = TP). This unwelcome result for Italian (and French) could also be avoided by considering the intermediate landing site of the subject in SpecT (inside C's spell-out domain) for the calculation of morphological realization of probe features. However, this solution leads to an overgeneration problem elsewhere: under long-distance movement of DP_{int} in French, we should see PPA in all clauses of the dependency. This is because the intermediate trace of the moving DP_{int} in Specv of the higher clauses (viz. the clauses in which DP_{int} is not base-generated) is in the same spell-out domain as the probe v_{Prt} of the respective clauses in a long-distance A'-dependency (assuming that these v_{Prt}-heads have access to the moving DP_{int} in its intermediate landing site at the edge SpecC of the embedded clauses, which is the case given standard phase theory, see Chomsky 2001). However, this is not the case in French long-distance dependencies, PPA can only surface in the clause in which DP_{int} originates (see examples in (7) above).[5] So taking into account intermediate copies cannot be the solution for French. In fact, D&R provide a different solution to the SV-Agr problem. Following Chomsky (2008), they assume that subject A'-extraction involves both an A- and an A'-chain. Then they propose that only A-chains (as in the context of cliticization) are subject to the realization condition in (9). Put differently, A'-positions are ignored for the algorithm in (9). Of course, this alternative solution cannot be used for French either, since this would wrongly exclude PPA triggered by A'-movement in French (the only A-position in such chains is the base position of DP_{int}, which is, however, not in the same spell-out domain as the probe v_{Prt}). Thus, it does not help to consider only a subset of positions (only A- or A'-chains, or only intermediate or terminal copies in movement chains) – under none of these assumptions can the French PPA-pattern be captured in D&R's system, as it either leads to over- or undergeneration of PPA. (e) Finally, problems arise in the morphological component when the morphological agreement rule in (9), only provided in prose in D&R, is technically implemented. The rule is relational in nature, viz. two elements need to interact to determine whether agreement is possible. This requires a memory device (e.g. a shared index) such that the PF component "knows" which elements have entered into Agree in the syntax. However, such empty devices

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[5] Note that past participle agreement can occur in every clause of a long-distance dependency e.g. in the Algonquian language Passamaquoddy (Bruening 2001: ch.4), so the absence of PPA in higher clauses in French is not a general property of participle agreement.

are to be banned from the syntactic computation in the Minimalist Program (cf. Chomsky 1995 et seq.), the framework that D&R adopt (see also Rezac 2004: ch.3 for a critical discussion of derivational memory). For all of these reasons, we do not adopt (a version of) D&R's attempt at a uniform analysis of PPA-contexts for French.

3 Against a unified treatment of PPA with *avoir* and *être* in standard French

At this stage the central question that arises is whether it is actually adequate and useful to try to unify the occurrences of PPA with *avoir* and *être*. In this section we provide arguments for a separate treatment of the *avoir-* and *être*-contexts. The argumentation is based on the observation that these contexts differ in several ways (each of which has individually been mentioned before in the literature on French PPA). We have already discussed the first one, viz. the role of linear order: movement of DP_{int} is only a necessary condition for PPA with *avoir*, but not with *être* (see section 1).

Second, PPA with *avoir* and *être* differ in their robustness. It has often been noticed that PPA with *être* is basically obligatory and indeed very robustly used in spontaneous spoken and written varieties of French, while the usage of PPA with *avoir* in the contexts where it is possible is (more or less) variable (Boeckx 2003, Branigan 1992, Friedeman & Siloni 1997, Guasti & Rizzi 2000, Sportiche 1992, Vega Vilanova 2018). More precisely, PPA with *avoir* is neglected in particular in A'-movement constructions (*wh*-movement, relativization of DP_{int}), but less so under DP_{int}-cliticization; PPA with *avoir* has been characterized as a phenomenon of (normed) written standard French but not of spontaneous spoken varieties. This split between PPA uses with *avoir* and *être* can also be corroborated by corpus data (Stark 2015a, b, Stark & Riedel 2013). While PPA is realized in about 90 percent of the cases in French text messages (corpus *sms4science.ch*), spoken French in Switzerland (corpus *OFROM*), spoken French in France (corpus *C-ORAL-ROM*) and spoken French from Switzerland and France (corpus *PFC*, Stark 2015a), a closer look at the distribution of unrealized PPA in these four corpora shows that the constructions with *avoir* differ from those with *être* in a significant way:

	Not realized	Realized	Total
Avoir	25 23.4%	82 76.6%	107 100%

Être	32 7.8%	377 92.2%	409 100%
elliptical construc-tions	15 7.7%	179 92.3%	194 100%
Total	72 10.1%	638 89.9%	710 100%

Table 1: Past participle agreement in *sms4science.ch* according to the construction

	Not realized	Realized	Total
Avoir	7 46.67%	8 53.33%	15 100%
Être	7 11.29%	55 88.7%	62 100%
elliptical construc-tions	0 0%	20 100%	20 100%
Total	14 14.58%	82 85.42%	97 100%

Table 2: Past participle agreement in OFROM according to the construction (only consonantal, i.e. `audible', phonetically realized agreement)

	Not realized	Realized	Total
Avoir	9 45.0%	11 55.0%	20 100%
Être	7 10.6%	59 89.39%	66 100%
elliptical construc-tions	0 0%	24 100%	24 100%
Total	16 14.55%	94 85.45%	110 100%

Table 3: Past participle agreement in C-ORAL-ROM according to the construction (only consonantal agreement)

	Not realized	Realized	Total
Avoir	5 (F) + 1 (CH) 35.71% − 33.3%	9 (F) + 2 (CH) 64.29% - 66.7%	14 (F) + 3 (CH) 100%
Être	2 (F) + 0 (CH) 8% - 0%	23 (F) + 6 (CH) 92% - 100%	25 (F) + 6 (CH) 100%
elliptical construc-tions	0 (F) + 0 (CH) 0%	13 (F) + 2 (CH) 100%	13 (F) + 2 (CH) 100%

Total	7 (F) + 1 (CH)	45 (F) + 10 (CH)	52 (F) + 11 (CH)
	13.46% - 9.1%	86.54% – 90.9%	100%

Table 4: Past participle agreement in the French and Swiss parts of PFC according to the construction (only consonantal agreement)

14. *En fait c'est c-* **la géographie je l**$_{FEM.SG}$**'avais découvert**$_{(MASC.SG)}$ *en | _ | en pen-dant mon année de sciences sociales*
    (OFROM)
    `For real it's c- the geography I it-had discovered in /_ / during my year of sci-ences *social*.'

15. *C'est vraiment une destination complètement différente / de* **celle**$_{FEM}$**-s**$_{PL}$ **que j'avais fait-e**$_{FEM}$**-s**$_{PL}$ *avant*   (C-ORAL-ROM)
    `It's really a destination completely different / from the-one that I-had done-FEM-PL.'

16. **La retraite** *[…] […] […] parce que je l*$_{FEM.SG}$**'ai pris**$_{(MASC.SG)}$ *un peu plus tôt que, que prévu*   (PFC France)
    `The retirement […] […] […] because I it-have taken a bit sooner than, than foreseen.'

17. **Une amie** *[…] Donc au   début   ils,   **ils   l**$_{FEM.SG}$**'ont   mis-e**$_{FEM.SG}$*
                     (PFC France)
    `A friend […] Thus at-the beginning they, they her-have put-FEM.SG.'

Examples (14) to (17) illustrate varying PPA with *avoir*. (15) and (17), with highly specific referents, show PPA, while (14) and (16) represent abstract referents as internal arguments, with a generic flavour – and without PPA.

In all four corpora the lack of normative obligatory PPA with *avoir* are consider-ably higher than those for *être* (the absolute numbers for the oral corpora being very low, we could not run statistical tests, but the descriptive quantitative difference is evident). PPA with *avoir* seems more or less randomly applied in these data.

A further difference between PPA with *avoir* and *être* concerns its interpretative effects. As discussed at length in Déprez (1998) for a variety of contexts, the use of PPA with *avoir* obligatorily leads to a specific/definite (also referred to as "referen-tial") interpretation of DP$_{int}$, while the absence of PPA leads to ambiguity: in this case DP$_{int}$ can be interpreted either as specific/definite or as non-specific/indefinite (Dé-prez 1998: 12, see also Boeckx 2003, Rizzi 2001). The basic observation goes back to Obenauer (1992). Consider example (19):

18. *Combien   de   fautes   a-t-elle   fait(-es)?*   (Déprez 1998: 10)
    how.many of mistakes has-L-she made-FEM.PL
    "How many (amongst a known set of) mistakes has she made?"   (with PPA)

"What is the number of things that are mistakes and that she has made?"

(without PPA)

If PPA is used, we are talking about a specific, contextually presupposed set of mistakes; if PPA is absent, there is no such presupposition. Thus, PPA with *avoir* instantiates the cross-linguistically (and also in Romance languages) wide-spread phenomenon of differential argument encoding (cf. Aissen 2003, Bossong 1985, Enç 1991), which is always associated with interpretational differences of this kind (though it can also correlate with other dimensions than definiteness, e.g. animacy). Where French differs from most other Romance languages in this respect is that the split manifests itself as head-marking (viz. on the verb, also attested in other languages, e.g. in Persian) instead of dependent-marking (on an argument DP). In contexts with *être*, however, PPA is simply obligatory, regardless of the interpretation of the internal argument as specific or non-specific.

Finally, PPA with *avoir* and *être* differ in their "naturalness". Inside the Romance family, the normative rules for French PPA with *avoir* are rarely found. Ibero-Romance (except Catalan), Romanian, Sicilian and the Walloon dialect of Liège do not know PPA with *avoir* and its equivalents. Older stages of French show that this type of PPA was largely disappearing as early as the 12th and 13th century (cf. e.g. Brunot 1899: 523-524, Jensen 1990: 336). There are many Romance varieties that show a generalized PPA with internal arguments, regardless of word order (e.g. Languedocian Occitan), Friulian, Central and Southern Italian dialects, also some archaic registers of Italian (LaFauci 1988: 81-82)); there are many others that show generalized agreement with (third person) object clitics, again irrespective of word-order (i.e. with pro- or enclisis), e.g. standard Italian, Provençal and Auvergnat (Occitan), Catalan, Ladin, some Rhaeto-Romance varieties, Northern Italian dialects (cf. Loporcaro 2010: 151-153). According to Loporcaro (1998: 13, but he doubts the dialectal data), only standard French, one Oïl variety and Aosta Valley Francoprovençal know PPA with *avoir* based on linear order. Furthermore, PPA with *avoir* in standard French meets all five criteria of "grammatical virus theory" (cf. MacKenzie 2013), and the variability of PPA with *avoir* correlates with lower socioeducative status of the speakers – it seems to be a learned rule (cf. Brissaud & Cogis 2008, Stark & Riedel 2013 for evidence from *sms4science.ch*). This is not the case for PPA with *être* corresponding to the parallel predicative construction and the historical adnominal origin of PPA (*elle est morte* meaning `she died' as well as `she is dead'). In fact, the complex rules of PPA with *avoir* were allegedly formulated by the 16th century poet Clément Marot (cf. Levitt 1973), copying and maybe partially misinterpreting the contemporaneous Italian facts.

We take all these differences between PPA with *avoir* and *être* in French to suggest *a non-uniform analysis* of the phenomenon, i.e. the source of *être*-PPA is different from that of *avoir*-PPA. Nevertheless, the two occurrences of PPA also have something in common: in French, PPA never targets the external argument (agent) as an agreement controller, the locus of PPA is always the past participle (never any other form of the verb, e.g. not the verb in simple present tense), and there is only a single set of exponents for PPA (the same suffixes are used, regardless of the form of the auxiliary). In addition, PPA is generally impossible in impersonal constructions (see Kayne 1989, Déprez 1998: 2: *Les chaleurs tropicales q''il a fait-*es.* / *Qui sait [combien d'erreurs] il sera fait-*es?*), regardless of the auxiliary. Any analysis of PPA in French must explain both the differences as well as the similarities of PPA with *avoir* and *être*. In the next section, we will propose such an analysis.

4 An alternative proposal

In a nutshell, we propose that PPA under *être* results from *phi*-agreement between past participle v and the internal argument in its base position, while PPA under *avoir* is an instance of resumption, where the resumptive pronoun (RP) that resumes the internal argument is incorporated into past participle v. Reanalyzing PPA in *avoir*-contexts as resumption derives its sensitivity to linear order (movement of DP_{int}) and its restriction to the minimal clause under long movement. We couch our analysis within the Minimalist Program (Chomsky 1995 et seq.). Syntactic structure unfolds step-by-step from bottom to top by alternating application of the operations *Merge* (external or internal), which combines two elements, and *Agree*, which establishes feature transfer between a head and a phrase in its c-command domain. In Minimalism, syntactic operations are triggered by uninterpretatble features [uF] that need to be discharged in the course of the derivation. These features occur in an ordered set on heads: Merge is triggered by a c-selection feature [uX] (where X ranges over category values) and is satified by combining the head that bears [uX] with an element of the matching category [X]; Agree is triggered by an unvalued probe feature [uX:__] that is valued by the corresponding valued features on a goal XP. We adopt the following functional sequence of verbal heads: V-v-Aux-T-C. The internal argument is merged as the sister of V; v is the head that introduces the external argument (this is triggered by the feature $[uD_{\theta}]$ on v, which states that v requires a DP in its specifier and assigns a thematic role to it). V moves to v to pick up the inflection in v. Perfect auxiliaries are generated between v and T in the head Aux. The form of Aux (*avoir* vs. *être*) is morphologically conditioned by the argument structure of V/v: if v introduces a thematic (agentive) external argument (unergative/transitive-active verb), viz. if it

has a [uD$_\theta$]-feature, Aux is realized as *avoir*, in all other cases Aux is realized as *être*.[6] Movement (internal Merge) is subject to locality constraints such as the Phase Impenetrability Condition (PIC, Chomsky 2000, 2001), which enforces successive-cyclic movement through the edge (viz. the specifier) of every phase head on the way to its terminal landing site. As is standardly assumed, we take v and C to be phase heads (see Urk 2015 for recent discussion). As a consequence of the PIC, an internal argument that is to undergo A'-movement or cliticization needs to make an intermediate stop-over in an outer specifier of the vP. Following the aforementioned literature on phases, we take intermediate movement steps to phase edges to be triggered by edge features, rendered as [uEF]; edge features can optionally be added to phase heads when necessary (i.e. if the internal argument is to move out of the vP to the the TP- or CP-domain).[7]

We take PPA to be the phonological realization of *phi*-features, which represent the internal argument, located on past participle v (represented as [v, status: PP]). The difference is how these phi-features come to be on v: via agreement or incorporation of a resumptive pronoun. In the cases where PPA is obligatory and independent of movement (i.e. contexts with the auxiliary *être*), we assume that v agrees in phi-features with the internal argument in its base position (the complement of V). What these *être*-contexts have in common is that the head v does not introduce an externally merged DP in its specifier (unaccusative v does not select an external argument to begin with, and passive v is deprived of this ability e.g. by a lexical operation that deletes the relevant feature [uD$_\theta$] on v prior to the syntactic computation, see Chomsky 1981). The connection between v's inability to introduce a DP in Specv and its ability to trigger phi-agreement with DP$_{int}$ can be formally expressed by the (language-specific) negative feature cooccurrence restriction (FCR, Gazdar et al. 1985) in (19). This FCR states that the head v bears a phi-probe (to Agree with DP$_{int}$)

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[6] We adopt a post-syntactic realizational model of morphology. The choice between *avoir* and *être* can thus be modeled as a purely morphological phenomenon, viz. as contextual allomorphy (though nothing crucial hinges on this for present purposes): there is only a single Aux-head in perfect and passive clauses; what varies is the phonological realization of this Aux-head in the post-syntactic component. The choice is sensitive to the locally accessible features of the head v, the head of Aux's sister node. Either v (or vP, which also bears the features due to projection) bears a (discharged) [uD$_\theta$]-feature (unergative/active-transitive v) or not (unaccusative v). In the former case, Aux is realized as *avoir*, in the latter as *être*.

[7] In French, Specv can only serve as an intermediate landing site, not as a terminal landing site since French has neither scrambling nor object shift. Hence, with respect to internal Merge-triggering features, v can only bear edge features, but not criterial features (in Rizzi's 2006 sense). When exactly edge features can be added to phase heads is a controversial issue, since this seems to involve look-ahead; we will ignore this issue here since it is orthogonal to our main questions; see Georgi (2014) for an overview of the debate.

only if it does not have a [uD]-feature, i.e. if it does not trigger merge of an external DP in Specv. (20) shows the full set of features an unaccusative/passive v-head can thus bear: [uV] (triggers Merge of v with the VP), a phi-probe [uphi: __] (given the FCR in (19)) that seeks a value that is provided by Agree with a DP, and finally v can optionally bear an edge feature [uEF] (triggers an intermediate movement step of DP$_{int}$ to an outer Specv position, if DP$_{int}$ is to undergo movement to the TP or CP-domain). These features on v are ordered (indicated by `>'). i.e. they are discharged one after the other from left to right.

19. ¬ [uD] ⊃ [uphi: __]
20. unaccusative/passive v: [uV > uphi:__ (> uEF)]

The derivation for such contexts proceeds as follows: V merges with the internal argument DP$_{int}$; v merges with the VP (satisfying [uV]), attracts V and probes in its c-command domain for valued phi-features. It finds those of DP$_{int}$ and copies them to v (valuing the probe: u̶phi: *value*). Next, if DP$_{int}$ is to undergo movement, v bears an edge feature that triggers an inter-mediate movement step of DP$_{int}$ to SpecvP, see (21). vP will then be selected by Aux, AuxP by T, etc.

21. structure of unaccusative/passive vP (with DP$_{int}$-movement):
[$_{vP}$ DP$_{int}$ [$_{v'}$ v+V [$_{VP}$ t$_V$ t$_{DPint}$]]]

The phi-values on v are morphologically realized, which gives rise to PPA. We assume a postsyntactic realizational model of morphology à la Distributed Morphology (DM, Halle & Marantz 1993, 1994) in which the abstract morphosyntactic features are paired with phonological features (viz. exponents) only after the syntax. The exponents, called vocabulary items (VIs) in DM, for phi-features on past participle v are provided in (22):

22. VIs for PPA (phonic code, applies only to some lexically restricted PPs):[8]
a. /_C/ ↔ [fem] / [v ___, [status:PP]]

⠒
[8] The phonetic realization of PPA in (feminine) gender is dependent on the lexical item; participles such as *mis*, 'put', or *écrit*, 'written', show overt PPA-marking, participles ending in [-e] do not. The context restriction in (23) states that these exponents realize phi-features only if they are located on v and if v is in its past participle (PP) form (or status). This is a strictly local instance of allomorphy (all relevant features are on the same head). We assume that the form of v (viz. its status: infinitive, past participle, etc.) is determined by the closest c-commanding verbal head, here Aux; this is a case of status government. One can model this e.g. as an Agree relation between Aux and v where Aux

b. /_V/ ↔ [masc] / [v ___, [status:PP]]

PPA in *être*-contexts surfaces independently of whether the internal argument undergoes movement or stays *in-situ* (as in the inversion constructions under (5) and (6) discussed in section 2) because phi-Agree between v and this argument applies *before* DP_{int} (possibly) undergoes movement; subsequent DP_{int}-movement out of v's probing domain can thus not bleed agreement. We have thereby derived that PPA in *être*-contexts is obligatory (otherwise the phi-probe on v would remain unvalued, leading to the crash of the derivation) and independent of whether DP_{int} undergoes movement or stays *in-situ*.

We now turn to the second case, *avoir*-contexts, where PPA is sensitive to linear order and exhibits DOM-effects. Aux is realized as *avoir* when v selects an external argument, viz. if it has $[uD_0]$-feature (unergative + active-transitive verbs). Given the FCR in (19), such a v-head does not bear a phi-probe, and hence, PPA under *avoir* cannot be the result of agreement between v and the internal argument.[9] Instead, we argue that PPA results from resumption + incorporation. The idea that PPA in these contexts is related to resumption goes back to Boeckx (2003). He draws the connection because of two facts: (i) same interpretative effects: in dependencies that involve resumption (usually relative clauses), the DP associated to the resumptive pronoun (RP) is interpreted as specific/definite, and PPA under *avoir* leads to the same interpretation of the moved DP_{int}; (ii) island amelioration: just as resumptives do in many languages, PPA ameliorates island violations caused by DP_{int} in French (Boeckx 2003: 60). There are different approaches to resumption in the literature (see Salzmann 2017: ch.3 for a recent overview). We will adopt the widely-assumed stranding / BigDP-approach (see Aoun et al. 2001, Belletti 2006, Boeckx 2003, Donati & Cecchetto 2011). According to this approach, the resumptive and its associate DP start out as one constituent, i.e. nominal arguments have an additional layer, a head

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values the unvalued status feature of v (which probes upwards, unlike the *phi*-probe on v). Please note that in the orthographic code the VIs can be formulated as follows:

a. <-e>   ↔ [fem] / [v ___, [status:PP]]
b. <-$\emptyset_1$>   ↔ [masc]/ [v ___, [status:PP]]
c. <-s>   ↔ [pl]   / [v ___, [status:PP]]
d. <-$\emptyset_2$>   ↔ [sg]   / [v ___, [status:PP]]

[9] In Romance varieties in which PPA is possible with *in-situ* internal arguments under *avoir*, e.g. in Languedocian Occitan, v would always bear a phi-probe that probes for phi-features in its c-command domain, regardless of the context (viz. the argument structure of the verb). Thus, the (language-specific) FCR in (20) would not be active and PPA has only one source, viz. phi-agreement, in these varieties, not two different sources under *avoir* vs. *être*, as we claim for French.

that combines with the DP. We will call this head H. H bears the phi-features of its sister DP due to a phi-Agree relation between H (bearing a phi-probe) and the DP. By assumption, when the nominal argument is to undergo movement, either the whole HP can move or the DP subextracts and strands the head H. A stranded head H (adjacent to a gap) is realized as a resumptive pronoun; if H moves along with the DP and is thus adjacent to DP, this pronoun remains phonologically silent if we postulate a VI as in (23):

23. $/\emptyset/ \leftrightarrow$ [H] / ___ DP

We will adopt the stranding/BigDP-analyis to resumption but add the assumption that a stranded head H incorporates into the closest c-commanding head, viz. into v (to have a host for the affixes that spell-out H's features). Since H bears its associated DP's phi-features, these are located on v after incorporation and are phonologically realized there by the VIs in (22) (these VIs do not care about where the phi-features on the past participle in v come from: Agree or incorporation). Thus, PPA in *avoir*-contexts is basically the head-marking equivalent of resumption. The stranding/BigDP-approach also offers an explanation for why PPA with *avoir* requires movement of DP_{int} and for the distribution of PPA under long-distance DP_{int}-movement. We will illustrate this in what follows for an active-transitive verb. In this context, the v-head bears the ordered set of features in (24) ([uD] is replaced by [uH] since nominal arguments are assumed to be HPs now, but this feature still triggers Merge of the external argument). As before with unaccusative v, v first triggers Merge with the VP, then it assigns accusative case to DP_{int} (triggered by the feature [ucase:acc]). Afterwards, v triggers Merge of the external argument (of category HP now due to the H-layer above the DP) and assigns the agent theta-role to this argument.

24. transitive-active v: [uV > ucase:acc > uH_θ (> uEF)]

What is of interest is whether DP_{int} undergoes movement out of the vP. If it does, v must bear an edge feature [uEF] to trigger an intermediate movement step of HP_{int} to Specv; if DP_{int} stays *in-situ*, v does not bear [uEF]. There are three scenarios to consider: in the first, the internal argument HP_{int} does not undergo movement (v does not bear [uEF]). We do not see PPA with in this context with an *in-situ* internal argument because H cannot be stranded (and hence cannot incorporate into v) if no movement of HP_{int} is triggered in the first place. In the second and third scenario, the internal argument HP_{int} does undergo movement; thus, v bears the feature [uEF]. Let usn first assume that the whole HP_{int} moves to SpecvP and then further to a higher

position (= second scenario). Since the head H is not stranded but is still adjacent to the DP, it does not incorporate but is realized as zero (cf. (23)); hence, there is no PPA with a moved internal argument. In the third scenario, only the DP-part of HP_{int} moves to its intermediate landing site SpecvP. In this case, H is stranded, incorporates into v and gives rise to PPA when its phi-features are phonologically realized (by the VIs in (22)). Hence, we have a case in which movement of the internal argument cooccurs with PPA. Since resumption (and other doubling phenomena), of which PPA is considered a subcase here, gives rise to a specific/definite reading of the associated DP and since resumption presupposes movement in the stranding analysis of resumption, we have derived Déprez' (1998) DOM-generalization: if there is PPA, the internal argument receives a specific/definite reading (because the DP-part of it must have moved out of the VP); if there is no PPA, there is ambiguity – the internal argument can have a specific reading (scenario two where the whole HP moves out of the VP) or a non-specific reading (HP does not move at all and stays inside VP, the domain of existential closure, cf. Diesing's 1992 Mapping hypothesis). Furthermore, we have also implemented in our analysis the generalization that PPA in French never targets the external argument, but only internal arguments. In *être*-contexts, this is because the probe on v probes downwards into its c-command domain of which the external argument is never a part.[10] In *avoir*-contexts, PPA results from incorporation of a stranded head and we know independently (see Baker 1988) that incorporation targets higher (c-commanding) heads, but cannot involve lowering of the head to a c-commanded host. PPA on v triggered by the external argument would, however, require lowering of the stranded H to v (since HP_{ext} is base-merged in Specv). Finally, the resumption / stranding analysis of PPA also offers an explanation for the distribution of PPA under long-distance movement of the internal argument in active-transitive constructions (cf. Boeckx 2003: 60): stranding is impossible in positions other than the base position of HP. In higher positions it would involve extraction from a moved phrase, but moved phrases are islands for subextraction. This is a general constraint on movement dependencies known as the Freezing Principle (Wexler & Culicover 1980), a subcase of the even more general condition on extraction Domains (Huang 1982).[11] [12]

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[10] The probing direction of [uphi:__] on v is of course just a stipulation, but it is suggested by the fact that only internal arguments trigger PPA. There is a consensus in the agreement literature that languages, and even individual heads in a given language, can differ in the direction of probing (upwards or downwards, see Baker 2008); the probing direction must be learned and is not predictable. In varieties in which PPA is triggered by (some) external arguments (e.g. in Abruzzese cf. D'Alessandro & Roberts 2010), the probe searches upwards for a goal.

[11] Boeckx's (2003) resumption analysis of French PPA differs from the one presented here (which follows more closely his general analysis of resumption in other languages) in that he postulates a

What is still missing in our analysis is a discussion of cases where PPA is impossible, viz. impersonal constructions. How can this be explained? Recent results from the research on expletives as we find them in impersonal constructions lead to the conclusion that expletives are base-merged in SpecvP (and not in SpecTP); hence, they occupy the same position as external arguments. The only difference with external arguments is that expletives do not receive a theta-role from v, but both compete for the same position (at least in languages without transitive-expletive constructions like French). Expletives are thus only possible when v does not select a thematic external argument (cf. Alexiadou & Schäfer 2012, Deal 2009, Richards & Biberauer 2005). We can thus say that v that does not select an external argument, viz. passive/unaccusative v, can still have a c-selection feature [uH], but one that is not associated with a theta-role (unlike the feature [uH$_\theta$] of unergative/active-transitive v). This non-thematic [uH]-feature can be discharged by external merge of an expletive.[13] Now recall the FCR in (19): it says that only v-heads that do not have an externally merged specifier (external Merge triggered by [uD], which is now [uH] given our new assumptions) bear a phi-probe. The [uH]-feature in the FCR is under-

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[11]
silent resumptive; this resumptive does not incorporate into v, rather, v agrees in *phi*-features with the resumptive element in its *in-situ* position. We do not adopt this view because French is not a pro-drop language, so we would have to stipulate that pronouns can be zero only in this special case. Furthermore, we do not see how this agreement with the silent resumptive is blocked when the internal argument does not undergo movement at all, viz. why there is no agreement with *in-situ* internal arguments – the resumptive could still be present in the BigDP-structure. Boeckx does not say anything about the analysis of cases where PPA is obligatory or impossible.

[12] Once we say that arguments are HPs and not just DPs, this holds in general, and thus also in the *être*-contexts with unaccusative/passive v – the sole argument must be an HP here, too. This requires a few amendments to the derivation in *être*-contexts. If the sole (internal) argument undergoes movement, either the whole HP moves (corresponding to the derivation sketched in (22), if we replace DP by HP), or the DP subextracts – a possibility not considered above for these contexts. As a consequence, H is stranded and incorporates into v. Thus, v bears the *phi*-features of its internal argument twice, once via Agree and once via incorporation. However, this does not lead to a double spell-out of these features, viz. double PPA. The reason is that the features of an element form a set, and for sets it holds that {a,a} = {a}. Hence, the two instances of the same *phi*-features are reduced to a single instance, and we see PPA only once. Thus, the extension required for the *avoir*-contexts (arguments are HPs) does not have any undesired consequences for the *être*-contexts.

[13] Obviously, the empirical observation that expletives are only possible in French (and many other languages) when the verb does not have a thematic external argument does not hold for languages with transitive expletive constructions (TECs). In such languages, external arguments and expletives do not compete for the same base-Merge position, but rather occupy different specifiers of v. This is also suported by the observation (= Bures's generalization) that TEC-languages have object shift/scrambling, and hence clearly an additional position available at the edge of vP (see e.g. Alexiadou & Schäfer 2012 for discussion).

specified for theta-roles, so it holds for heads with [uH] regardless of whether discharge of [uH] goes hand in hand with theta-role assignment (active-transitive v) or not (as in impersonal construction). Since in an impersonal construction v also bears [uH], it cannot bear a phi-probe by (19). As a consequence, there cannot be PPA as a result of Agree with HP$_{int}$ in impersonal constructions. What would technically remain as a source of PPA is thus resumption + incorporation. Syntactically, nothing rules out such a derivation (scenario 3 above). We follow Déprez's (1998) insight that this derivation is excluded for semantic reasons. Recall that PPA under *avoir* leads to a specific/definite interpretation of the internal argument (because it involves movement of a subpart of the argument out of the VP, the domain of existential closure). However, impersonal constructions are subject to a definiteness restriction, viz. the associate of the expletive (= the internal argument of the verb) must be indefinite/non-specific. This clashes with the required interpretation of PPA (or resumption more generally) as definite/specific. Hence, the structure can only be interpreted if HP$_{int}$ stays *in-situ* and thus necessarily receives a non-specific interpretation. To conclude, the two sources of PPA that we have proposed for French (downward Agree and resumption) are not available in impersonal constructions, and hence PPA is excluded.

To summarize, we have presented two different mechanisms that give rise to PPA in French, run-of-the-mill agreement and resumption. The choice of the strategy is connected to the argument structure of the verb (more precisely, the existence of an externally merged specifier in SpecvP). The different properties of PPA under *avoir* and *être* as well as the obligatoriness vs. optionality vs. impossibility of PPA in the various contexts fall out from general properties of the corresponding fairly standard formal implementations of these phenomena, viz. Agree (for agreement) and the stranding/BigDP-approach (for resumption).

5 Conclusion

In this paper, we have argued for two different analyses to account for PPA in standard French. While it is generally assumed that PPA in French is triggered or at least correlated with the absence of the internal argument in its original position (movement through a specific syntactic position), PPA with *in-situ* internal arguments is commonplace in constructions with the auxiliary *être*, as opposed to those with the auxiliary *avoir*. Auxiliary selection is related to argument structure, i.e. to the presence of an external argument in SpecvP. PPA in unaccusative, passive and related constructions (*être*), common in the history of and in modern varieties inside the Romance language family and robust also in production data, are analyzed as regular

Agree operations between a probe in v and the goal, the internal argument, irrespective of any further movement operations. Contrary to PPA in these constructions with *être*, PPA in constructions with *avoir*, especially the standard French regularities (PPA with all kinds of moved internal arguments, including *wh*-elements, never with *in-situ* direct objects) are almost never attested in other Romance varieties. They were lost early in the history of French (before its normalization in the 17th century) and are not applied consistently by native speakers in French (neither in spoken nor in written corpora). As they seem to correlate with a certain specificity effect (cf. Déprez 1998), absent in the case of generalized PPA with *être*, they can be compared to the phenomenon of DOM, widespread in Romance, but usually realized as dependent-marking. We therefore argue that PPA with *avoir* can be assimilated to DOM, as a kind of differential head marking, and be analyzed as resumption and incorporation of the *phi*-features of the internal argument as subextraction (out of VP see Diesing 1992) from the internal argument. This analysis also accounts for the unusual distribution of PPA under long-distance movement of the internal argument as well as for the impossibility of PPA in impersonal passive constructions. The fact that standard French possesses two different mechanisms that trigger PPA is maybe related to the origin of PPA with *avoir* as a kind of `reinvented', originally artificial rule (cf. Stark 2015a) which became reinterpreted as a kind of differential argument marking device, otherwise absent in standard French. The optionality (or variation) in PPA with *avoir* observed in many speakers is due, we suggest, to the contradiction that the learned normative rule (generalized PPA with the moved internal argument in constructions with *avoir*) creates with the actual system (no PPA with non-specific internal arguments), leading to a conflict between the internal grammatical system and the prescriptive norm.

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