

1 Introduction

- A conceptual question at the heart of modern syntactic theory:
 - *What is the correlation between ϕ -Agree and movement?*
- Early minimalism (e.g., ?) postulated a strong correlation: ϕ -Agree is the result of movement through specific syntactic positions
 - (1) **Specifier-head agreement:**
If AgrX is an agreement head and DP a phrase bearing ϕ -features, morphological agreement obtains only if the following structural configuration obtains:
 - (2) [AgrXP DP [AgrXP AgrX [... ~~DP~~ ...]]]
- This is especially successful for agreement phenomena in the v P domain, e.g., past-participle agreement in Romance and Scandinavian, which is (mostly) contingent on movement across the participle (?, ?; ?)
 - (3) *French*
 - a. Jean n'a jamais fait(*es) **ces sottises**
Jean NEG.have.3SG never done.M.SG/*F.PL these stupid things.F.PL
'Jean has never done these stupid things'
 - b. Jean ne **les** a jamais fait(**es**)
Jean NEG THEM.CL have.3SG never done-F.PL
'John has never done them.'
(adopted from ?)
- Modern minimalist theories usually assume, however, that ϕ -Agree is formally dissociated from movement
 - (4) **Agree (? ? , ?):**
An Agree relation obtains between a head H and a phrase XP, provided:
 - (i) Matching: XP bears valued features that are a superset of the unvalued features on H
 - (ii) Locality: There is no YP asymmetrically c-commanding XP that satisfies matching
- This formulation is based on a variety of cross-linguistic examples where ϕ -Agree obtains in the absence of overt movement (some examples may involve covert movement; see ?)

¹For helpful discussion and comments, I thank Kenyon Branan, Justin Colley, Colin Davis, Amy Rose Deal, Danny Fox, Heidi Harley, Sabine Iatridou, Daniel Margulis, David Pesetsky, Norvin Richards, Ian Roberts, Michelle Yuan, and audiences at DP-60. For patient help with judgements, I thank Paul Marty, Sophie Moracchini, Keny Chatain, Ben Storme, Daniel Margulis, and Ezer Rasin.

- Tsez (?), English (?), Icelandic (?), Hindi-Urdu (?), Basque (?)

- (5) Ram-ne [rotii khaa-nii] chaah-ii
 Ram-ERG bread.F eat-inf.F want.PERF.FSG
 ‘Ram wanted to eat bread.’
 (? : 792)

- Cases where ϕ -Agree appears to trigger movement are captured by a stipulated feature, either on the head or on the Agree-probe itself
- This state of affairs leaves unanswered a number of fundamental questions, both theoretical and technical
 - How do we handle PPA and other apparent instances of Spec-Head agreement in a long-distance ϕ -Agree framework?
 - Can we predict the distribution of EPP features, i.e., which probes trigger movement, or must this be stipulated in an ad-hoc, language specific way?
 - Why should agreement and movement ever be correlated in the first place?
- Goals for today: Use PPA as a case study to probe the bigger questions surrounding ϕ -Agree and Merge/Move, in support of the following conclusion:

- (6) **ϕ -Agree/Merge correlation:**
 Every ϕ -probe is associated with an EPP feature that forces Merge to the triggering head

- Consequences:
 - ⇒ All else being equal, ϕ -Agree triggers movement
 - * Spec-Head patterns result from interference effects on heads with a semantic requirement to introduce an argument: agreement trigger and argument compete for Merge
 - ⇒ (At least some) null subject languages have EPP and null expletives
 - ⇒ A new approach to expletive *there*
 - ⇒ Broad cross-linguistic empirical coverage of when Agree can be “long-distance”
- Outline
 - Past-participle agreement
 - * Challenges to long-distance-Agree frameworks
 - * A new empirical generalization
 - * Capturing the data
 - A new treatment of expletive *there*
 - The Agree/Merge correlation
 - * Proposal
 - * Null subject languages have the EPP & null expletives
 - * Predicting the cross-linguistic distribution of LDA

2 Proposal

2.1 Architectural Preliminaries

My proposal depends on some background conclusions concerning the nature and structure of the syntactic derivation, which I lay out here. I will be taking for granted ?'s (?) *Obligatory Operations* (ObOp) framework, as well as some ancillary assumptions concerning *Case* and *Agree*. The central premise of the ObOp framework is that each primitive syntactic object H is associated with a (potentially empty) set of operations $O = \{o_1, o_2, \dots\}$, along with structural conditions $C = \{c_1, c_2, \dots\}$ that govern when the operations can apply. If, in the course of the derivation, condition c_i on operation o_i on head H is met, then operation o_i must apply. If condition c_i is never met, however, o_i never applies and the derivation continues.

ObOp has important consequences for both of the main syntactic operations, *Agree* and *Merge*, that will be relevant to my proposal. Concerning *Agree*, ObOp is usually coupled with some independent assumptions about Case that I will also adopt, so I begin by spelling them out. First, I will assume the Dependent model of case (?; ?), and in particular (i) that case is valued configurationally in the syntax (Preminger 2014: Ch.9) according to the rules in (7), and (ii) that unvalued case features do not crash the derivation, in keeping with general ObOp logic.

(7) **Case valuation:**

- a. Lexical Case: Given the configuration [H DP], where H is a lexical case assigner, value the case feature on DP.
- b. Dependent Case: Given the configuration [DP₁ [... [... DP₂ ...]]], where DP₁ and DP₂ have unvalued case features, value the case feature on DP₂.

I also adopt the related hypothesis that ϕ -*Agree* is case discriminating (?; ?): case valuation determines whether or not a given DP is accessible to ϕ -*Agree* (see ??), with accessibility parameterized across languages according to the *Moravcsik Hierarchy* (see (8b)). The most restrictive languages make only those DPs with unmarked case accessible for agreement, while some languages also make DPs with dependent case accessible, and some even tolerate agreement with DPs bearing lexical case.

(8) **Case Accessibility:**

Accessibility to *Agree* is determined according to the *Moravcsik Hierarchy*:
unmarked case » *dependent case* » *lexical/oblique case*

With these results in place, we can define *Agree* as in (9).

(9) **X-Agree**

- a. o_i : copy the value of X on YP onto H
- b. c_i : apply o_i at H iff there is some YP with feature X such that:
 - (i) Locality: H c-commands YP and there is no ZP c-commanded by H and asymmetrically c-commanding XP that bears feature X
 - (ii) Accessibility: YP is (case) accessible to H

The ObOp logic then dictates that if a head H is associated with an agreement operation *X-Agree*, this operation must take place if the conditions on its application are met. If these conditions fail to be met, for example because the only possible target of *Agree* is not case-accessible, the derivation proceeds without crashing. I refer the reader to Bobaljik (2008) and Preminger's (2014) work for more information and accept these principles as given.

The ObOp logic also has important consequences for the operation of *Merge*. Following Preminger (2014: 10.1.3), this can be nicely illustrated via the paradigmatic case of *wh*-movement. Granting that *wh*-movement proceeds through all Spec(CP) positions along its path, so that the derivation of (10a) thus contains at least the two steps in (10b), a challenging question has always been how to motivate the movement to non-interrogative C heads.

- (10) a. What did John say that Sue bought?
 b. [_{CP} What [did John say [_{CP} ~~what~~ [that Sue bought ~~what~~]]]]

In the ObOp framework, we can capture this behavior in a uniform and parsimonious way by assuming that all C heads, both interrogative and not, are associated with the operation *Merge-wh*, defined in general below.

- (11) *Merge-X*
 a. o_i : merge (a projection of) H with an YP bearing the feature X
 b. c_i : apply o_i at H iff there is some YP with feature X such that:
 (i) YP is present in the numeration/lexicon (hasn't been merged before), or
 (ii) H c-commands XP in the structure and there is no YP c-commanded by H that both asymmetrically c-commands XP and bears the feature *wh*

In the case of the embedded clause in (10), ObOp therefore dictates that the non-interrogative C must merge with the *wh*-phrase in its scope. In examples where there is no *wh*-phrase present in the structure, however, the *Merge-wh* operation simply goes untriggered.² Because untriggered operations are unproblematic, the derivation converges, as desired. We can therefore safely assume that all C heads have the same operations associated with them, thereby removing the “special” status of intermediate movement.³

This logic can be readily extended to other cases of *Merge* as well. For instance, we can capture the canonical EPP effect by positing that there is an obligatory *Merge-D* operation associated with T, as follows. Granting that T is not capable of introducing new arguments (it is not a θ -position, nor is $\llbracket \text{TP} \rrbracket$ underlyingly type $\langle e, \tau \rangle$), there are therefore two cases in which *Merge-D* could apply, given the definition in (11): (i) there is an expletive, which does not require a θ -role and which I will take to be semantically vacuous, present in the lexicon/numeration, or (ii) there is an XP already present in the structure that can be moved to Spec(TP). Adopting the null hypothesis that *Merge* has access to both the lexicon and the outputs of all previous instances of *Merge*, one of these two conditions will always be met: either the complement to T contains an DP that can move to satisfy EPP, or there is no such DP, in which case an expletive can be selected from the lexicon.⁴ In either case, there is always something available to be merged, so by the ObOp logic, Spec(TP) must always be occupied. This correctly captures the fact that Spec(TP)

²The selection and introduction of a *wh*-phrase from the lexicon is ruled out by θ -theoretic concerns, I assume.

³In contrast, if we assume, following Chomsky (2000, 2001), that uninterpretable features crash the derivation, the treatment of long-distance *wh*-movement requires that we posit two varieties of non-interrogative C: one that bears the movement-triggering feature, and which is used in exactly those cases where there is a higher interrogative C, and one that does not bear the movement-triggering feature, and which is used in all other cases.

⁴Languages like English, French, Mainland Scandinavian present a *prima facie* problem in that expletives are arguably restricted to being merged in Spec(ν P) (see Section ??; ?; ?; ?; a.o.). This raises the possibility that such languages should allow an empty Spec(TP) in the case where the complement to T does not furnish an EPP-satisfying element, counter to fact. We can exclude this possibility if we assume that ν also has an $[\text{oxo}]$ feature. The logic above then proceeds identically, but at the ν P level: either a lower XP must be merged or attracted, or an expletive merged. Spec(ν P) will therefore always be occupied, which ensures that there will always be an XP that is accessible to satisfy the EPP at T.

must be occupied in languages with this operation.

- (12) a. Case (i): lower accessible DP
 [EXPL/XP [T [... [... DP ...]]]] (Merge(T,DP) or Merge(T,EXPL) *obligatory*)
 b. Case (ii): no lower accessible DP
 [EXPL [T [... [... YP ...]]]] (Merge(T,EXPL) *obligatory*)

Once we admit that some heads are associated with obligatory *Merge* rules that operate according to the ObOp logic, an important question arises: are these cases somehow special, or are all possible merger operations available at a given head specified in the lexicon, like the types of available *Agree* operations? For the remainder of this paper, I assume that the possible *Merge* operations available at *H* are indeed pre-specified, so that all cases of *merge* and *agree* are governed by the same logic. It's important to point out that this does not replicating syntactic structure in the lexicon, a common criticism of other varieties of feature-driven *Merge*. Specifying the merge operations at head *H* merely serves to define the domain of operations available at that head, but gives no information about the order they apply in, which operations apply in which derivation, etc. In particular, I do not assume any predetermined ordering on operations, or any requirement that a given operation take place beyond those imposed by ObOp. The operations that take place in the derivation and their order are therefore governed purely by concerns of interpretability, e.g., as encoded in a type theory on semantic interpretation, and by the ObOp logic.

Before moving on, I illustrate a simplified derivation to highlight the key aspects of the system. For convenience, I will hereafter encode the operations available at a given head in terms of the features below, and say that a given feature is discharged by the associated operation.

- (13) a. Agree features: [X: _], *Agree* with a YP bearing X
 b. Merge features: [oXo], *Merge* with a YP bearing X

Limiting attention to the heads V, *v*, T, C, and assuming for simplicity that these are the only heads in the clausal spine, we arrive at the feature specification in (14): V has at least a feature selecting its complement; *v* has a [oDo] feature for merging the external argument and various merge features for attracting A'-elements; T has a canonical EPP feature and a ϕ -probe; C has features for attracting various A'-elements, including *wh*, topic, etc.

- (14) a. V: [[oDo],...] c. T: [[o_vo],[oDo], ϕ :_]
 b. *v*: [[oVo],[oDo],[o_{wh}o],[oTopo],...] d. C: [[oTo],[o_{wh}o],[oTopo],...]

Example (15) is then derived as follows, with the order of operations determined by concerns of interpretability. First, V merges with *what*, satisfying its [oDo] feature. Next *v* merges with VP, satisfying its [oVo] feature, then the external argument, satisfying its [oDo] feature, then finally with the internal argument *what*, satisfying its [o_{wh}o] feature. T is then merged in the structure, satisfying its [o_vo] feature, and attracts the external argument *Mary*, satisfying its [oDo] feature. Finally, C merges with TP, satisfying [oTo], and with *what*, satisfying [o_{wh}o].

- (15) a. What did Mary buy?
 b. [_{CP} what [C [Mary [T [what [Mary [*v* [buy what]]]]]]]]]

2.2 Proposal

Recall the essential challenge raised by the PPA data in the introduction: on the one hand, there is a clear correlation between movement and PPA that does not follow on the long-distance theory

of *Agree* (at least not without additional stipulations); on the other hand, the correlation is not perfect, raising well known challenges to the Spec-Head theory (citations). I would like to argue that this essential conflict teaches us that the correlation between *Agree* and movement is neither as rigid as assumed under the Spec-Head theory, nor as stochastic as assumed by theories that posit an “EPP”-property on some but not all probes. Specifically, I propose that the syntactic derivation is governed by the basic economy principle in (16), and that this encodes the precise degree of correlation between *Agree* and movement evidenced by the PPA data.

(16) **Feature Maximality (FM):**

Given head H with features $[F_1] \dots [F_n]$, if XP discharges $[F_i]$, XP must also discharge each $[F_j]$ that it is capable of.

The core idea is that once a phrase XP has been selected as the target for a syntactic operation originating at head H , the relationship between H and XP must maximize to include all possible additional operations originating at H capable of targeting XP . This principle subsumes and extends the “free rider” property of *Agree* (φ , φ ; φ , φ), and is closely related to the notion of economy proposed by φ .

For a brief demonstration, suppose H is a head bearing an *Agree*-triggering feature, say $[\varphi: _]$, and an *Merge* feature, say $[\circ D \circ]$. By (16), if $[\varphi: _]$ on H is discharged via *Agree* with a φ -bearing target DP , then DP must also discharge $[\circ D \circ]$, that is, DP must be merged with (a projection of) H . This has the effect that *Agree* obligatorily triggers *Move* if the head bearing the probe feature has an undischarged EPP feature. Alternatively, suppose that $[\circ D \circ]$ on H is discharged by merging a new DP in the structure. Since *Agree* is conditioned on c-command by the head containing the probe feature, a first-merged DP is not eligible to discharge the $[\varphi: _]$ on H , so only the EPP-feature is discharged. In such a scenario, a lower DP may then discharge the probing feature on H without undergoing obligatory movement, since the EPP feature has already been discharged.

I now argue that (16) encodes precisely the degree of correlation between *Agree* and movement that is manifest with PPA. This both explains the formerly puzzling PPA data and supports the existence of a principle like FM in the grammar.

3 Capturing PPA: Core cases

In this section, I show how the economy constraint in (16), when combined with the framework assumptions laid out above, captures the core behavior of PPA in the languages introduced in Section 1. Throughout this section, I will especially depend on the hypothesis that φ -*Agree* is case discriminating (Bobaljik 2008; Preminger 2014), and in particular that Standard Italian, French, and Mainland Scandinavian are alike in limiting φ -*Agree* to DP s unmarked for case.

3.1 Transitive clauses, *in situ* objects

I begin by considering the behavior of transitive clauses with *in situ* objects, where PPA fails to obtain in the languages under consideration. I repeat the illustrative examples from Section 1 below.

(17) Standard Italian

(18) French

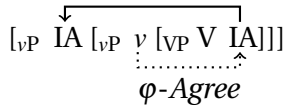
(19) MSc

Adopting the usual structural assumptions from the PPA literature – that PPA is triggered by a φ -

probe on the head that introduces the external argument (see, e.g., Kayne 1988; Chomsky 1995; Belletti 2001; Chomsky 2001; Roberts & D’Alessandro 2008; a.o.) – this behavior is exactly as predicted on the present theory. As discussed above, at the point where v is merged in the structure, it has an undischarged $[\circ D \circ]$ feature for introducing the external argument, an undischarged $[\phi: _]$ feature, and various undischarged $[\circ X \circ]$ features for attracting A’-elements. Setting aside the A’-features for now, there are two derivational options available at this point: (i) discharge $[\phi: _]$ via *Agree* with the internal argument; (ii) discharge $[\circ D \circ]$ by merging the external argument.

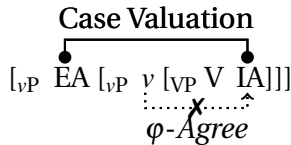
Because I am assuming no inherent ordering, both operations are equally available, so let’s assume first that option (i) is chosen, *Agree* with IA to discharge $[\phi: _]$. By (16), because IA is also capable of discharging $[\circ D \circ]$, it must, so *Agree* triggers movement in this case. While this sequence of operations is syntactically licensed, the corresponding derivation crashes at LF. To see why, let τ denote the type that vP must be to combine felicitously with higher projections. Since v is responsible for introducing the external argument, it must therefore be type $\langle e, \tau \rangle$. Granting that DP movement is interpreted via λ -abstraction (?), movement of IA to Spec(vP) does not saturate the type e argument slot of v , so that the resulting vP will be type $\langle e, \tau \rangle$. After movement of IA, the vP is therefore still an unsaturated predicate that needs an external argument to combine with higher functional heads. However, the $[\circ D \circ]$ feature on v was exhausted by merger with IA, so no further DP can be merged. The derivation therefore crashes at LF, so that option (i) is ruled out on interpretive grounds.

(20) *Agree* w/ IA ($[\phi: _]$); *Move* IA ($[\circ D \circ]$); crash



Let’s see what happens with option (ii), which instead features merger of the external argument (EA), discharging $[\circ D \circ]$, as the first step. Because *Agree* is contingent on asymmetric c-command, merger of EA does not discharge $[\phi: _]$ on v . We might therefore expect that v finds IA and undergoes *Agree* with it, producing unattested PPA with an *in situ* object. Crucially, however, the presence of EA renders IA inaccessible to ϕ -*Agree*: recall that on the model of case adopted here, merger of EA triggers valuation of the case feature on IA, rendering IA inaccessible to ϕ -*Agree*, by hypothesis. In other words, while IA is local enough to trigger ϕ -*Agree*, it is blocked from doing so by the case feature induced by the presence of EA. Finally, while ϕ -*Agree* is ruled out, this derivation is otherwise convergent, correctly deriving the surface form for a basic transitive clause.

(21) *Merge* EA ($[\phi: _]$); Case valuation; ϕ -*Agree* blocked; ✗ PPA



It’s worth pausing at this point to review the work that *Feature Maximality* does in the context of the wider framework. One way to summarize our conclusions is to say that by directly tying *Agree* to movement in the case of v , Feature Maximality induces a competition between *Agree* with the internal argument and *Merge* with the external argument. Because the external argument must be merged for interpretive purposes, it always “wins” this competition, with the effect that ϕ -*Agree* is obligatorily delayed until after the external argument has been merged. This is the essential role of Feature Maximality. The absence of PPA is then a side effect of this

delay, reflecting the familiar fact from Bobaljik and Preminger’s work that ϕ -Agree is often allergic to case-marked DPs.

One point that this discussion makes clear is that v ’s role as an argument introducer is fundamental to blocking PPA: if there was no semantic need to merge an argument in Spec(v P), derivation (i) from above, where the internal argument moves to Spec(v P) concomitant with PPA, might be expected to converge.⁵ As I will now argue, this is exactly the state of affairs that obtains with passive and unaccusative clauses, deriving the second core class of PPA data from Section 1.

3.2 Passive/unaccusative predicates

I turn my attention now to the second major class of PPA data from Section 1, passive/unaccusative predicates. Before I can show how the proposal explains these facts, however, it is necessary to understand the feature composition of passive and unaccusative v . It turns out that the ObOp framework adopted here commits us to some very particular assumptions in this domain, which I briefly spell out now.

3.2.1 Feature composition at passive/unaccusative v

To this end, recall that with transitive v , a [\circ D \circ] feature was independently needed to introduce the external argument. Assuming passive and unaccusative v s do not introduce an external argument, there is no semantic prerequisite for postulating such a feature in these cases. We are thus left to ask whether [\circ D \circ] is present at all on passive/unaccusative v .

I’d like to begin by observing that this question is intimately linked with the related question of where expletives are introduced in the structure. In particular, if we assume, following e.g., Chomsky (2000; 2001), that expletives are always merged directly in Spec(TP), we are lead to the conclusion that passive/unaccusative v has an optional [\circ D \circ] feature. I illustrate with an example from Swedish: the internal argument of a passive clause with an expletive subject may appear *in situ* as well as in an intermediate position to the left of the participle, which I take to be Spec(v P):

- (22) a. Det har blivit skrivet **tre böcker**.
EXPL has been written.N.SG three books
b. Det har blivit **tre böcker** skrivna
EXPL has been three books written.N.PL
(Holmberg 2001: 86)

From (21) we conclude that v must not have an [\circ D \circ] feature, as it would obligatorily attract the internal argument, and from (22) that v must have this feature, to facilitate short movement across the participle. If we assume that v is a phase in all its incarnations (Φ ; Φ), we can make the same argument in French, where passive internal arguments are obligatorily *in situ* with expletive subjects ((23a)) indicating v must not have D, but can nonetheless front to subject position in the absence of an expletive ((23b)), necessitating an intermediate A-movement step to Spec(v P) and hence a [\circ D \circ] feature on v .⁶

If, in contrast, we follow Φ , Φ , Φ in assuming that expletives are merged in Spec(v P) (at least in languages without transitive expletives), then [\circ D \circ] is obligatory on all varieties of v . Cases with

⁵Alternatively, if v had more than one [\circ D \circ] feature, we would expect that it could both trigger movement of IA and merger of EA. None of the languages under consideration seem to allow this option, although we might expect to find it cross-linguistically, e.g., in languages where there is overt evidence for multiple A-specifiers. I set aside this interesting extension for now.

⁶The intermediate position is for some reason not available in French (Svenonius 1998).

an *in situ* object (cf. (21a), (22a)), involve, on this view, expletive merger in Spec(ν P), exhausting [\circ D \circ] and blocking movement of the internal argument to Spec(ν P). Cases with a promoted internal argument (cf. (21b), (22b)) conversely involve object movement to Spec(ν P), exhausting [\circ D \circ]. Cases with intermediate object promotion (cf. (21b) and its English counterpart) involve, following Deal (2009), moving the object to Spec(ν P), then introducing the expletive in the specifier of the head hosting *be*, which we can likewise take to be a variety of unaccusative ν and hence itself capable of introducing an expletive.⁷

- (23) a. *In situ* object:
- b. Full promotion:
- c. Partial promotion:

Faced with the choice between the two options above, we have strong cause to prefer the second. Empirically, this option is supported by a variety of arguments that expletives are indeed merged in Spec(ν P), a full rendering of which is precluded for space reasons (but see ?; ?; ? for extensive discussion). At the conceptual level, this optional allows us to maintain a uniform feature distribution across all varieties ν , limiting variation to the semantic contribution these heads make. Finally, permitting optional features, as is required on the first approach, presents a serious challenge to ObOp, and must therefore be avoided if we are to maintain the essential hypothesis that syntactic operations are obligatory. In particular, allowing that features, and the associated syntactic operations they encode, are optionally present or absent on a head is equivalent to allowing that syntactic operations are optional, which contradicts the ObOp hypothesis. If we are to maintain ObOp, then, we must adopt the hypothesis that [\circ D \circ] is present on passive/unaccusative ν in all cases, and hence that expletives are merged in Spec(ν P).

- (24) **Uniformity of feature distribution:**
All incarnations of ν have the same feature makeup: {[\circ D \circ], [ϕ : $_$], [\circ A' \circ], ...}
- (25) **Low-merge theory of expletives:**
In languages without transitive expletives, expletives must be merged in Spec(ν P).

3.2.2 Back to PPA

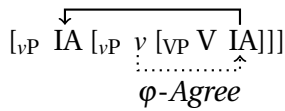
We are now prepared to address the main issue of this section – the distribution of PPA in passive/unaccusative clauses. Let's begin with the case where the internal argument is promoted to Spec(TP). PPA is obligatory in this scenario in all the languages under consideration.

- (26) Italian
- (27) French
- (28) MSc

⁷Two additional questions remain about this case (i) why such movement is not possible in French, and (ii) why it is obligatory in English. Concerning (i), descriptively speaking it appears that French *be* is not capable of introducing an expletive, forcing expletive insertion at the lower ν head and keeping the expletive low. This should ideally be derived, or at least confirmed independently. For the English case, one option is to say that passive ν cannot introduce an expletive, but only truly unaccusative ν 's can, including the one associated with *be*. I set these two complications aside for the remainder of the paper.

As in the transitive case, we focus on the stage of the derivation directly after merger of v . At this point, there are two relevant undischarged features on v , $[\phi: _]$ and $[\circ D \circ]$. Assuming as before that there is no implicit order on the operations, there are two derivational options at this junction: (i) discharge $[\phi: _]$ and *Agree* with IA, or (ii) discharge $[\circ D \circ]$ and merge an expletive. Suppose first that we take option (i). In this case, Feature Maximality dictates that IA must move to Spec(v P): IA has been targeted for an operation at v , and hence all possible operations at v targeting IA must be carried out, resulting in merger of IA at Spec(v P). The logic so far is identical to the transitive case. The crucial difference, however, is that the present derivation does not crash at LF: passive/unaccusative v are not semantically specified to introduce an external argument, so there is no type mismatch when we move IA to Spec(v P). The derivation therefore proceeds unfettered.⁸

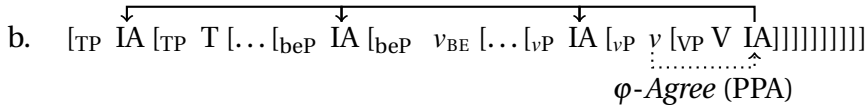
- (29) *Agree*(v , IA) ($[\phi: _]$), *Move* IA ($[\circ D \circ]$); ✓ PPA



From this point, the IA can then be attracted to Spec(TP) (potentially via an intermediate Spec(be P)) as in ??, ??, ??, or an expletive can be merged in the Specifier of the higher v associated with *be*, as in ??. In either case, the key observation is that PPA is obligatory: the ϕ -feature on v has an accessible goal, and so it must target it by the ObOp logic, with corresponding obligatory movement to Spec(v P).

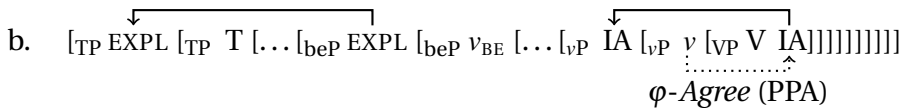
- (30) Full promotion (cf. ??, ??, ??):

a. Tre böcker har blivit skrivna.



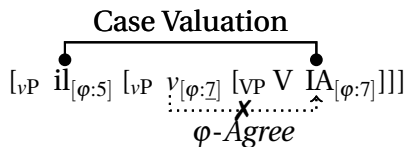
- (31) Partial promotion (cf. ??)

a. Det har blivit tre böcker skrivna.



Derivational option (ii) – discharge $[\circ D \circ]$ on v first – proceeds much as in the transitive case, except that an expletive rather than an external argument is merged in Spec(v P). PPA is thus predicted to be precluded just in case the expletive induces case valuation on the lower DP.

- (32) *Merge* EXPL; Case assignment; *phi-Agree* blocked; ✗ PPA:



The languages under consideration split into two groups concerning the prediction. The first group, French and Mainland Scandinavian, use the third person default pronoun as an exple-

⁸In the appendix, I present a syntax and semantics for the passive that formally encodes this, but for present purposes all that matters is that passive v is not derivationally constrained to introduce an external argument, like transitive v .

tive. Because case is only marked in these languages on pronouns, and because pronouns are generally barred from appearing as the associate to an expletive, it is not possible to directly confirm that these expletives are case competitors. That said, on their non-expletive uses, the third person singular default pronoun in both languages is clearly a case competitor, inducing dependent (accusative) case on its co-arguments.

- (33) a. French
b. MSc

Under the null hypothesis that the expletive and non-expletive version of the pronoun have the same case properties, we conclude that the expletive in these languages is a case competitor, so that PPA should be blocked with *in situ* internal arguments in the presence of expletive subjects. This is borne out.

- (34) French
a. Il est mort(*es) **trois sauterelles**.
it is died.(*PL) three grasshoppers
'There died three grasshoppers.'
b. Il a été fait(*es) **deux erreurs**.
it has been made.(*F.PL) two errors
'There have been three errors made'

- (35) Swedish (a) & Norwegian (b)
a. Det har blivit skriv-et/*na **tre böker** om detta.
EXPL have been written-N.SG/*PL three book.PL on this
'There have been three books written on this'
b. Det har vorte skriv-e/*ne **mange bøker** um dette.
EXPL has been written-PL/*SG many book.PL on this
'There have been many books written on this' (? : 86, 104)

As is well known, Italian passive and unaccusative predicates with *in situ* objects pattern differently, in two important ways. First, setting aside PPA for the moment, Italian, as a null-subject language, tolerates *in situ* objects of passive/unaccusative predicates without an overt expletive in Spec(TP) (see ? for arguments that the internal argument is *in situ* in cases like (36)).

- (36) Unaccusative w/out participle

This behavior can be encoded in the present system in one of two ways. First, we can assume that [$\circ D \circ$] is optional on T and ν in Italian; in cases like (36), it is absent, whereas in cases of full object promotion (see ??), it is present. Second, we can assume that Italian T and ν have [$\circ D \circ$], like their counterparts in French and MSc, but that Italian has a null expletive. The first option is subject to the same caveats about optional features discussed above, so I will for now adopt the second option. In Section ??, I present independent evidence for this conclusion.⁹

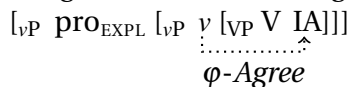
Second, *in situ* objects of passives and unaccusatives in Italian obligatorily trigger agreement at T. Such objects are thus licit targets for *Agree* and hence case accessible. Granting that Italian has a null expletive and our default assumption that dependent case is not accessible to *Agree* in Italian, we conclude that the Italian expletive is not a case competitor. Crucially, this conclusion is completely independent of PPA; it is forced, given our framework assumptions, purely on the basis of agreement at T. It's worth pointing out, moreover, that non-case-competing exple-

⁹The account of PPA actually does not depend on the choice between the two options in this case (see fn.11).

(37) Icelandic

(38) There were/*was three men in the room.

(39) *Merge* EXPL; no Case assignment; ϕ -Agree obligatory; \checkmark PPA:



(40)

3.3 Optional PPA with clitics/*wh*-phrases

Setting aside PPA, the only difference between the derivation of an example like (41), with a fronted *wh*-object, and its counterpart in ??, with an *in situ* object, is the activation of a [◊wh◊] feature on *v* in the former but not the latter case. The extra degree of freedom that the active [◊wh◊] feature provides is exactly predicted to license the type of PPA we observe in such cases.

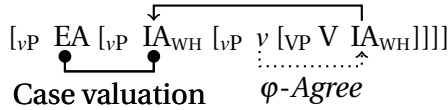
¹¹Setting aside the optionality problem, we also predict the PPA facts if we assume Italian *do* does not have a null expletive. On this model, passive/unaccusative *v* has a variant without a $[\phi D \phi]$ feature. The $[\phi; _]$ must therefore be discharged via *Agree* with the object, and no movement ensues because *v* has no feature to trigger it.

- (41) a.
b.

In particular, consider the stage of the derivation of (41) where v has just been merged in the structure. In addition to the two derivational options possible in the simple transitive case, we now have the additional option of activating the $[\circ wh\circ]$ feature on v and attracting the object.

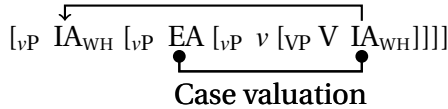
Let's see what happens if we take this option. According to Feature Maximality, we must ask which of the other features on v can be discharged by the object, then discharge them all. Recall that v has at least the features $[\circ D\circ]$, $[\circ wh\circ]$, $[\phi:_]$. Assume for now that the object cannot discharge both merge features simultaneously (I return to this issue below), so that discharge of $[\phi:_]$ is the only other available option, and hence must be taken. It follows that wh -movement of the object to $Spec(vP)$ is accompanied by ϕ -Agree, triggering PPA. The external argument can then be merged, exhausting $[\circ D\circ]$. The derivation converges, yielding (41a).

- (42) *Merge* IA ($[\circ wh\circ]$)/ ϕ -*Agree* IA; *Merge* EA ($[\circ D\circ]$); assign case; ✓ PPA:



Alternatively, if upon merging v we decide to first merge the external argument, discharging $[\circ D\circ]$, the wh -object is assigned dependent case, and is inaccessible to ϕ -Agree. The subsequent discharge of $[\circ wh\circ]$ will then not extend to the discharge of $[\phi:_]$, so wh -movement will not be accompanied by ϕ -Agree, correctly deriving (42b) without PPA. Finally, the option where we chose to discharge $[\circ D\circ]$ first by attracting the object is blocked on the same lines as in the simple transitive case (see ??).¹²

- (43) *Merge* EA ($[\circ D\circ]$); assign case; *Merge* IA ($[\circ wh\circ]$); ✗ PPA:



The account extends trivially to clitics on the hypothesis that they are attracted into the TP-domain by a special feature, call it $[\circ cl\circ]$ (?; ?), present on all phase heads and on the attracting head in the TP domain. The activation of this feature then licenses the optional PPA observed in, e.g., French exactly as above.

Recall that we have assumed the condition that the object is blocked from discharging both $[\circ D\circ]$ and $[\circ wh\circ]$ on v simultaneously. Before moving on, I'd like to show that this can be motivated and formally encoded in a principled manner. In particular, I propose the following principle on syntactic derivations.

- (44) **Syntactic Operations are non-overlapping:**

A given instance of *Merge* or *Agree* may discharge at most one $[\circ X\circ]$ or $[X:_]$ feature, respectively.

To motivate (44), it's helpful to think about the role that features play in our system. Recall from Section 2 that features are for us a notational aid for encoding the syntactic operations that head H is associated with. As suggested by its heading, (44) amounts in these terms to the hypothesis that each syntactic operation must be non-overlapping: the derivation can be conceived as com-

¹²This has the interesting, if unusual, consequence that in PPA cases, A'-movement "tucks in" below the external argument. This property is shared by ?'s (?) related system, and as he points out, does not cause any obvious problems.

prising a finite sequence of discrete steps, each of which takes an input and produces an output. If a H is associated with two merge operations, say *Merge-X* and *Merge-Y*, these must be undertaken separately, so that for instance merger with a phrase ZP with property X and Y discharges only one of the relevant merger operations. Crucially, though, (44) does not block a single ZP from being the target of multiple operations at a given head, as long as these operations may be enacted in a discrete sequence such that the conditions on the operation at each step are met. Thus a ZP may be the target of both an *Agree* and a *Merge* operation at head H , since the output of *Agree* between H and ZP meets the conditions on *Merge* of H and ZP. Feature Maximality may therefore still apply as before.¹³

The proposal that the *wh*-object in the examples above cannot discharge both the $[\circ D \circ]$ and $[\circ wh \circ]$ features on v can thus be seen to reduce to the basic generative assumption that the derivation is a finite sequence of discrete operations, hardly an innovation.

A final comment is in order concerning the pattern of PPA under clitic/*wh*-movement in languages other than French. Consider first Mainland Scandinavian. Per Holmberg's generalization, object pronouns never shift across the participle, so we do not expect this variety of PPA. In Swedish, there are two forms for the participle, the passive participle, which appears in passives, and the *supine*, which appears everywhere else. Only the passive participle inflects for number and gender, making it impossible to test whether *wh*-movement can trigger PPA. It should, in principle, be possible to test whether *wh*-movement triggers PPA in those Norwegian dialects with PPA, but I do not have data on this. It's important to note that PPA is completely absent from standard Norwegian *bokmål*, and only manifests in less common dialectal variants. Italian, on the other hand, behaves like French with respect to clitic-triggered PPA, with the exception that PPA with third person clitics is obligatory. Italian does not show PPA with *wh*-phrases, however. These facts are consistent with the present system, and can be captured if (i) third person clitics must move before EA is merged and (ii) *wh*-objects must move after EA is merged. As it stands, however, I see no obvious way of forcing (i) and (ii) without enrichment of our hypotheses. I will not pursue this further here, leaving the derivation of (i) and (ii) to future research.

Let's review where things stand at this point. First, the ObOp framework adopted here commits us to the hypothesis that v shares the same features across the clause types and languages considered, and that in particular all varieties of v are endowed with at least $[\circ A' \circ]$, $[\circ D \circ]$, and $[\phi: _]$ features. Second, we hypothesized that the syntactic derivation is constrained by a basic economy principle, Feature Maximality, which dictates that syntactic operations should involve the fewest number of operands as possible, i.e., if ZP discharges feature $[F_i]$ at H , it must also discharge all features $[F_j]$ that it is capable of. The relevant consequence is that *Agree* at H with ZP triggers movement to Spec(HP) if H can host ZP as a specifier. The PPA facts then fall out as a direct consequence of these two results.

In transitive clauses, if *Agree* is initiated with IA at v before merger of EA, IA must move to Spec(vP), exhausting the feature needed to merge EA and rendering the structure uninterpretable; if EA is merged first, IA receives dependent case and is inaccessible to *Agree*, blocking PPA. Making the object a *wh*-phrase, and hence activating the $[\circ wh \circ]$ -feature on v , adds the exact additional degree of freedom needed to license PPA: *Agree* with IA can trigger discharge of $[\circ wh \circ]$ rather than $[\circ D \circ]$, allowing IA to shift to Spec(vP) without blocking subsequent merger of EA; alternatively, EA can merge first, ruling out subsequent agreement with IA, which is nonetheless attracted to Spec(vP) by $[\circ wh \circ]$. The same logic carries over unchanged in passive/unaccusative clauses. The $[\circ D \circ]$ feature on v may either attract IA, in which case *Agree* (and PPA) is obligatory,

¹³Recall that *Merge* is subject to locality (see ??), so that once ZP has been merged at H , it no longer qualifies as a target for *Merge* at H . This rules out a derivation where ZP is merged to H per one obligatory operation, then immediately remerged per another.

or [\circ D \circ] may trigger expletive insertion. If the expletive is a case competitor, the derivation proceeds as in the transitive case. If, however, the expletive is non-agreeing and non-case-assigning, v may subsequently *Agree* with IA, licensing PPA.

The present account therefore offers the following answer to the essential challenge raised by PPA, namely that its distribution is unlike the distribution of agreement triggered by heads higher in the clause. The understanding of *Agree* deduced on the basis of agreement phenomena in the TP domain is correct. *Agree* is long-distance, and does not depend on a Spec-Head configuration. Rather, PPA is different from TP-domain agreement because it is triggered at a head that is also responsible for introducing syntactic (and semantic) arguments, and is thus more deeply intertwined with the calculus of case and predicate saturation. Agreement here is complex because it interacts with these processes directly. Agreement triggered by heads in the TP domain, in contrast, accesses the output of this process, rather than directly taking part in it.

4 Additional Predictions

The account sketched in the previous section makes a number of additional predictions concerning the possible realization of PPA cross-linguistically. I focus in this section on two such cases, the first concerning that availability of PPA with *in situ* objects of transitive clauses and the second on PPA with *in situ* objects of passives and unaccusatives.

4.1 PPA *in situ*

In Section 2, I presented the hypothesis that φ -*Agree* is sensitive to the case on the target DP, and moreover that languages can vary according to which cases they make accessible to φ -*Agree*, subject to the implicational hierarchy encoded below.

(8) **Case Accessibility:**

Accessibility to *Agree* is determined according to the *Moravcsik Hierarchy*:
unmarked case » *dependent case* » *lexical/oblique case*

The languages we have investigated so far fall into the most restrictive class, which makes only unmarked case accessible. It is well known, however, that even closely related languages can vary in terms of whether dependent case is accessible for φ -*Agree*. One well known case is the contrast between Hindi-Urdu and Nepali. The latter but not the former makes dependent case accessible, as illustrated below.

- (45) a. raam-ne rotii khaayii thii
 Ram-ERG.M bread.F eat.PERF.F be.PST.F
 ‘Ram had eaten bread.’ Hindi-Urdu
- b. Maile yas pasal-mā patrikā kin-ē
 I.SG.ERG DEM.OBL store-LOC newspaper.NOM buy.PAST-1SG
 ‘I bought the newspaper in this store.’ Nepali
 (?: 309f.)

We are therefore lead to expect that there should be Romance or Mainland Scandinavian varieties that both have a participle that can inflect morphologically to reveal the presence of φ -*Agree* at v and that make dependent case accessible for φ -*Agree*. Such languages, if they exist, are predicted to have obligatory PPA with all objects, irrespective of clause type or object position. To illustrate, recall that PPA is blocked in transitive clauses in French, Italian, MSc because EA must be merged before *Agree* targets IA, but this renders IA inaccessible by virtue of the dependent

case it induces. If dependent case is accessible for φ -Agree, however, it should be obligatory.

This prediction – that there should exist languages with obligatory PPA with all objects – is borne out across Romance: obligatory PPA with all objects occurs in at least Neapolitan (46a), pre-19th-century Italian (46b), some dialects of Occitan (46c), some dialects of Gascon (46d), and some dialects of Catalan (46e) (?: ?).

- (46) a. addʒə kɔttə/*kwottə a pastə
have.1.SG cookPTCP.F/cookPTCP.M the.F.SG pasta.F.SG
'I've cooked the pasta' *Neapolitan*
(?: 806)
- b. Maria ha conosciute le ragazze.
Maria has known.F.PL the girls.F.PL
'Maria has known the girls.' *18th Century (and earlier) Italian*
(?: 502)
- c. Abiò pla dubertos sas dos aurelhos.
had.3.SG very opened.F.PL his.F.PL two ears.F.PL
'He had well opened both ears.' *Occitan*
(?: 808)
- d. Oun ass icados éras culhéros?
where have.2.SG place.F.PL the.F.PL spoons.F.PL
'Where did you put the spoons?' *Gascon*
(?: 808)
- e. He trobats els amics.
have.1.SG found.M.PL the.M.PL friends.M.PL
'I have found the friends.' *Catalan*
(?: 808)

I have not found similar data in Mainland Scandinavian, although this may be in part because there are many fewer speakers overall and the variation is more constrained than in Romance.

5 Alternative treatments

6 Generalizing the result

7 Conclusion