The bound possessor effect: a new argument for the phasehood of definite DPs*

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1. Introduction

Phases have played a central role in Minimalist theories of locality since they were first proposed in Chomsky 2000. However, many questions still remain about the nature of phases. In this paper, I address two open questions about phases: first, what syntactic objects are phases; second, what syntactic property gives these objects phasal qualities.

Standard assumptions since Chomsky 2000 (p. 107) have held that phases are objects that are "propositional," consisting of at least CPs and vPs. Recent work by Grano & Lasnik (2018) and Barros & Frank (2017) have challenged the assumptions that phases are propositional in nature and can be defined simply as the maximal projections of certain heads. These papers show that certain clause-bound dependencies can exceptionally cross a clause boundary if the subject is a bound pronoun. Linking this bound pronoun subject effect to the phasehood of CP, Grano & Lasnik and Barros & Frank argue that whether a CP is a phase depends on the properties of its subject.

In this paper, I consider dependencies at the definite DP level. I show that these dependencies show a bound possessor effect, and account for it by adapting Grano & Lasnik's proposal, in turn providing support for that proposal (and less directly, Barros & Frank's). Critically, this account works only if definite DPs can be phases. The analysis thus constitutes a new argument that DPs can be phases, and affirms an older intuition that nominals delimit locality domains (e.g. Chomsky 1973, 1977).

The paper is organized as follows. In Section 2, I review the bound pronoun subject effect, discussed in detail by Grano & Lasnik and Barros & Frank, before describing the bound possessor effect (cf. Davies & Dubinsky 2003) in Section 3. I lay out my proposal in Section 4. I account for the bound possessor effect in Section 5 and propose extensions in Section 6. I address theoretical implications in Section 7 and conclude in Section 8.

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2. The bound pronoun subject effect

Grano & Lasnik (2018) and Barros & Frank (2017) note that in English, a number of dependencies show a clausebound restriction, i.e. cannot cross a clause boundary (a and b examples of (1) and (2)), except when the embedded clause has a bound pronoun subject (c examples). For ease of reference, I will call this effect "the bound pronoun subject effect." I refer interested readers to Grano & Lasnik's paper for formal experimental verification of this effect.

- (1) Gapping (Strikethrough: intended reading)
 - a. John likes Coke and Mary likes Pepsi.
 - b. *John said that Joe likes Coke and Mary said that Joe likes Pepsi.
 - c. $?John_1$ said that he_1 likes Coke and $Mary_2$ said that $she_{2/*3}$ likes Pepsi.

(2) *Comparative deletion*

- a. More people like Coke than like Pepsi.
- b. *More people said that Joe likes Coke than said that Joe likes Pepsi.
- c. ?More people₁ said that they₁ like Coke than said that they_{1/*2} like Pepsi.

Grano & Lasnik (and also Barros & Frank) propose that the clausebound restriction is actually a phase-bound restriction; i.e., the dependencies in gapping and comparative deletion cannot cross phase boundaries. The bound pronoun subject effect reflects the "neutralization" of a phase, so the boundary of the phase becomes irrelevant for these configurations.

3. The bound possessor effect

Dependencies are not only sensitive to clause boundaries. For instance, the dependencies in gapping and *wh*-movement cannot cross the boundary of a definite DP (a, b examples of (3) and (4)). Interestingly, as Davies & Dubinsky (2003) observed for *wh*-movement, this restriction is relaxed when the definite DP has a bound possessor (c examples).

This is not to claim that a bound possessor is sufficient to ensure the acceptability of gapping and *wh*-movement involving definite DPs. For example, Davies & Dubinsky observe that in *wh*-movement, there is an additional requirement that the verb be a "verb of creation," e.g. *to tell* rather than *to hear*, *to write* rather than *to edit*, *to sing* rather than *to listen to*. I will set aside the question about why the main verb matters, leaving that for future research. In this paper, I will only be concerned with the effect attributable to the bound possessor, which I will call the "bound possessor" effect for ease of reference.

(3) Gapping

- a. John joked about Obama, and Mary joked about Trump.
- b. *John told Colbert's joke about Obama, and Mary told Colbert's joke about Trump.
- c. ?John₁ told his₁ joke about Obama, and Mary₂ told her_{2/*3} joke about Trump.

- (4) Wh-movement (Davies & Dubinsky 2003)
 - a. [Which president]₁ did John joke about t_1 ?
 - b. *[Which president]₁ did Mary₃ tell Colbert's₂ joke about t₁?
 - c. [Which president]₁ did Mary₃ tell her_{3/*2} joke about t_1 ?

4. Proposal

The parallel between the bound pronoun subject effect and the bound possessor effect strongly suggests that they can be assimilated. In other words, just as bound pronoun subjects cause a (finite) CP to not be a phase, bound possessors have the same effect on a definite DP. I propose to unify these two effects with Grano & Lasnik's account.

4.1 A theory of candidate phases

Following Grano & Lasnik, I assume the following about phases and bound pronouns (5).

- (5) a. Certain heads, e.g. C, enter a derivation as "candidate phase heads"; their projections *become* phases later in the derivation.
 - b. Movement from a candidate phase is not subject to the Phase Impenetrability Condition (PIC) (Chomsky 2000, 2001).
 - c. Bound pronouns can exceptionally enter the derivation with unvalued phifeatures (Kratzer 1998, 2009, Rullmann 2004, Heim 2008, Landau 2016).
 - d. Unvalued features can get valued by a matrix binder.

I propose that a candidate phase head like C only becomes a phase head when it converges (6) (cf. Chomsky 2000:107, Felser 2004), i.e. gets its phi-features valued. This assumption is distinct from the conventional assumption that phases are propositional; if this were the case, then CPs, which are propositional by hypothesis, would be phases regardless of whether C's phi-features are valued or not.

- (6) a. C has unvalued phi-features, to be valued via *complementizer agreement* with the nearest c-commanded DP the subject (e.g. Haegeman & van Koppen 2012, *pace* Chomsky 2008, Zwart 1993, a.o.)
 - b. Convergence: Candidate phase heads with valued phi-features become phase heads.

I also note that my assumptions depart slightly from Grano & Lasnik's proposal. For Grano & Lasnik, what determines whether a C becomes a phase head or not is whether T has unvalued phi-features or not. My assumptions are also different from Barros & Frank's proposal, where the discourse properties of a subject, mediated by a functional head Shift (Frascarelli 2007, Frascarelli & Hinterhölzl 2007), determine whether CP is a phase or not. Despite their technical differences, both Grano & Lasnik's and Barros & Frank's proposals assume that whether CP is a phase or not ultimately depends on a functional head in C's

c-command domain. In contrast, my assumptions in (6) simply entail that whether CP is a phase or not depends directly on the features on its head C.

For expository purposes, following Grano & Lasnik, I adopt the following assumptions on locality (7), at least for English.

- (7) a. "Strong" PIC (Chomsky 2000) In the configuration [$_{ZP}$... [$_{HP}$ α [H YP]]], where HP is a phase, the domain of a phase head H, i.e. YP, is not accessible to operations outside HP; only H and its edge α are.
 - b. C is a candidate phase head, but v is not.

I note that in the context of definite DPs, the same gapping and *wh*-movement facts can be derived if we adopt another conventional set of assumptions (8). I will not do so here, in order to maintain consistency with Grano & Lasnik's proposal, and I refer readers to their paper for arguments for preferring (7) over (8).

- (8) a. "Weak" PIC (Chomsky 2001) In the configuration [$_{ZP}$... [$_{HP}$ α [H YP]]], where ZP and HP are phases, the domain of a phase head H, i.e. YP, is not accessible to operations at ZP; only H and its edge α are.
 - b. C and v are candidate phase heads, assuming that v always becomes a phase head.

To sum up, the current proposal predicts that an embedded clause does not behave like a phase when it has a derivation like the one outlined below (9).

- (9) a. A C head enters the derivation as a candidate phase head.
 - b. C agrees with the highest DP in its c-command domain the subject.
 - c. When the subject is a bound pronoun with unvalued phi-features, C's phi-features fail to get valued.
 - d. C does not become a phase head.
 - e. The PIC does not apply to movement from this CP.

4.2 The bound pronoun subject effect: the case of gapping

With these assumptions in place, I show how they yield the desired contrasts for gapping (10).

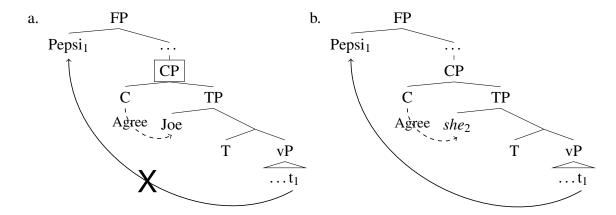
- (10) a. *John said that Joe likes Coke and Mary said that Joe likes Pepsi.
 - b. ?John₁ said that he₁ likes Coke and Mary₂ said that she₂ likes Pepsi.

Following Coppock 2001, Johnson 2009, a.o., I assume the remnant in gapping — *Pepsi* in (10) — moves from its base position to a position outside a vP (call it Spec,FP) in one fell swoop. Gapping across a finite clause boundary typically violates the PIC (7a), since

it involves crossing the boundary of the CP dominating the base position of the remnant: When the subject of this CP is an R-expression, like *Joe* in (10a)/(11a), the subject has valued phi-features. By hypothesis, C agrees with the subject, which values C's phi-features. As a result, C becomes a phase head, and CP a phase. The movement of the remnant across this CP boundary violates the PIC.

In contrast, consider the derivation where the subject inside the CP is a bound pronoun with unvalued phi-features (10b)/(11b). When C agrees with the bound subject, C's phi-features remain unvalued, so CP remains a candidate phase. Movement across the CP does not violate the PIC and so the resulting sentence is acceptable.

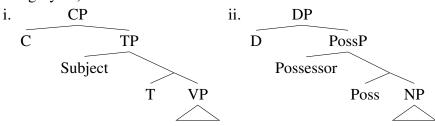
(11) Note: XP inside box: phase. *Italics*: bound pronoun with unvalued phi-features



5. Deriving the bound possessor effect

I now extend the above analysis to account for the bound possessor effect. To do so, I make the additional assumption in (12a) – independently motivated in the DP Hypothesis literature (Szabolcsi 1994, see also Abney 1987) – and crucially the assumption in (12b). "Poss" is intended as a syntactic category but not necessarily one with possessive semantics.

(12) a. CPs and DPs are isomorphic. Subjects and possessors are structurally analogous. (cf. other analyses where possessors are in Spec,DP, or are of the category D.)



b. Definite D is a (candidate) phase head.

5.1 Gapping

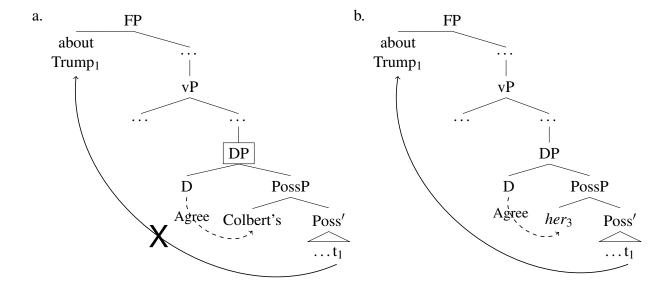
I will now show how the above assumptions about the syntax of DPs produce the desired contrast for gapping across DPs, which is typically unacceptable (13a).

- (13) a. *John told Colbert's joke about Obama, and Mary told Colbert's joke about Trump.
 - b. ?John₁ told his₁ joke about Obama, and Mary₂ told her₂ joke about Trump.

The reasoning is the same as the reasoning for gapping across an embedded clause. For a typical possessive DP, gapping across its boundary involves moving from a phase, namely, the definite DP itself. Consider the derivation when the possessor bears valued phi-features, as *Colbert's* in the case of (13a)/(14a). D agrees with the possessor and gets its own phi-features valued. Subsequently, D becomes a phase head, and DP a phase. Movement of the remnant from the DP violates the PIC, resulting in low acceptability.

However, if the possessor is bound (13b)/(14b), it may enter the derivation with unvalued phi-features. In that event, when D agrees with the bound possessor, D's phi-features remain unvalued and so DP remains a candidate phase. Movement of the remnant out of DP does not violate the PIC, and the resulting sentence is (relatively) acceptable.

(14) Note: XP inside box: phase. Italics: bound pronoun with unvalued phi-features



5.2 Wh-movement

A similar analysis applies to the bound possessor effect for *wh*-movement (15), first observed by Davies & Dubinsky (2003).

- (15) a. $*[Which president]_1 did Mary_3 tell [Colbert's_2 joke about t_1]?$
 - b. [Which president]₁ did Mary₃ tell [her₃ joke about t₁]?

I assume that *wh*-phrases do not move to Spec,DP in English. More specifically, following McCloskey 2002, a.o., I assume that movement to the specifier of a head must be triggered by features on the head. In English, lexical idiosyncracies mean that features that trigger *wh*-movement are found on C (maybe also v), but not on definite D.

When the definite DP contains a possessor bearing valued phi-features, e.g. *Colbert's* in (15a), D is a phase head and *wh*-movement from the DP violates the PIC. In contrast, when the possessor is bound and bears unvalued phi-features, e.g. *her* in (15b), D remains a candidate phase head, and so *wh*-movement from the DP does not violate the PIC.

6. Extensions to related wh-movement phenomena

In this section, I show how the candidate phase proposal can be extended to account for similar contrasts that do not involve bound possessors or bound pronoun subjects.

6.1 Demonstratives

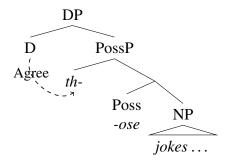
Davies & Dubinsky (2003) also pointed out that, if the main verb is a verb of creation, wh-movement from a definite DP also becomes more acceptable when there is a demonstrative in the DP (16). I will refer to this contrast as the "demonstrative effect."

- (16) a. *[Which president]₁ did Mary tell [DP Colbert's jokes about t_1]?
 - b. [Which president]₁ did Mary tell [DP those jokes about t_1]?

I suggest assimilating the demonstrative effect with the bound possessor effect. Key to this analysis is the assumption that in demonstrative DPs, Spec,PossP is occupied by a morpheme that lacks valued phi-features. For concreteness, I propose the following decompositional analysis of demonstratives (17), although other analyses are possible.

- (17) a. Distal and proximal semantics are encoded on morphemes, of the category Poss, that bear unvalued phi-features.
 - b. An expletive *th* is inserted in Spec,PossP to satisfy an EPP feature on distal and proximal Poss.
 - c. This expletive lacks valued phi-features.

d. Syntactic structure for [DP] those jokes...



As was the case for the bound possessor effect, D agrees with the expletive. Because the expletive lacks valued phi-features, D's features remain unvalued and the DP stays a candidate phase. *Wh*-movement out of the DP, as in (16b), does not involve moving from a DP phase, and so does not violate the PIC.

This analysis also raises the possibility that D's features remain unvalued throughout a derivation, since there is little independent evidence suggesting that demonstratives are bound by a higher DP. To the extent that D's features do not get valued, one needs to assume that unvalued features do not cause derivations to crash, as argued by Preminger (2014).

6.1.1 An argument for the absence of valued phi-features in Spec,PossP

I assumed above that in demonstrative DPs, Spec,PossP is occupied by a morpheme that lacks valued phi-features. I argue that English agreement morphology provides independent support for this assumption. For the sake of argument, suppose that the expletive *th*-morpheme comes with fixed phi-feature values. If so, the distal or proximal Poss head should agree with it. In other words, demonstrative articles should be morphologically invariant regardless of the number of the NP complement, a prediction that is not borne out. Demonstrative articles in English show number agreement with the NP complement instead (18).

(18) a. Proximal Poss: this book- $\underline{\emptyset}$ (sg.) / these books (pl.)

b. Distal Poss: that book-0 / those books

6.1.2 Why pursue a decompositional analysis?

One might also question the utility of the decompositional analysis presented in (17), which implies that demonstratives are syntactically more complex than what their orthographic representations suggest. There are at least two advantages to adopting this analysis. First, analyzing th- as an expletive inserted to satisfy EPP features allows us to explain why demonstrative articles in English all have the same voiced th- initial, instead of showing greater variation in morphophonological form. Maxime Papillon (p.c.) also points out that the same analysis could be extended to French, whose demonstratives begin with a c- (/s/) initial.

The second advantage of this analysis, to be elaborated in the next section, is that it has clear structural parallels to existential constructions, and so adopting it makes possible a unified analysis of certain phase obviation facts relating to demonstrative and existential constructions.

6.2 Existential constructions

In English, existential and demonstrative constructions are similar in at least two respects. First, they have similar agreement facts: in existential constructions, the copula agrees with the pivot DP that follows it. As pointed out above, a demonstrative article agrees with the NP that follows it. Second, in the same way that PossPs in demonstratives share a *th*-initial, TPs in existential constructions all have the expletive subject *there*.

These similarities suggest that the two constructions are structurally parallel and the analysis proposed above for demonstrative constructions can be adapted straightforwardly to existential constructions. More concretely, suppose that like *th*-, expletive *there* also lacks valued phi-features (*contra* Deal 2009, e.g.). When an existential construction is embedded in a CP complement, C's phi-features remain unvalued after C agrees with expletive *there*. By hypothesis, C remains a candidate phase head.

This analysis thus predicts that existential constructions should show obviation effects similar to the bound pronoun subject effect. For ease of reference, I will call this predicted effect the "existential *there* effect." This prediction is borne out — Barros & Frank (2017) report exactly such an effect (19), attributing the observation to Larry Horn.

(19) a. Gapping

Jill claimed that there was a problem with the heating, and Sally elaimed there was a problem with the climate control in general.

b. *Comparative deletion*

More people claimed that there was a problem with the economy than claimed there was a problem with illegal immigration.

(Barros & Frank 2017, pp. 9–10, exx. 21d and 23d)

I note that Grano & Lasnik's proposal does not predict the existential *there* effect. In their analysis, a CP becomes a phase when T's phi-features are valued. In existential constructions, T's phi-features do get valued — via the pivot — yet the CP behaves like a candidate phase. In other words, their analysis undergenerates, an empirical problem that can be resolved with the present set of assumptions about convergence and candidate phases.

7. Additional remarks on *wh*-movement from DPs

In preceding sections, I argued that definite DPs and finite CPs are (candidate) phases. This proposal recalls pre-*Barriers* theories of subjacency, where NP and S/S' (in more modern parlance, DPs and CPs) are also locality domains (e.g. Chomsky 1973, 1977). Given the importance of *wh*-movement to subjacency and its descendants, in this section, I discuss some open issues relating to *wh*-movement from DPs and their theoretical implications.

7.1 On the Complex NP Constraint

Like the theory of subjacency, phase theory provides a way to derive the Complex NP Constraint (Ross 1967). When a (definite) DP is a phase and there is no *wh*-movement to Spec,DP, a *wh*-phrase must move directly from the complement of D. Such a movement operation violates the PIC. However, according to the current proposal, there are also circumstances where DPs remain as candidate phases, e.g. when the DP has a demonstrative or a bound possessor, and when the main verb is a verb of creation. We predict *wh*-movement from complex NPs to be acceptable when these conditions are met.

This prediction is partially supported. As Davies and Dubinsky themselves noted (pp. 31–32, also Ross 1967), under these circumstances, *wh*-movement of arguments is possible out of these complex NPs (20a). However, I note that *wh*-movement of adjuncts remains impossible; in (20b), the adjunct *how angrily* can only be understood as modifying the matrix VP *write his report*..., and not the VP in the complex NP *criticized the assistant*. This argument–adjunct asymmetry suggests that the Complex NP Constraint cannot be entirely reduced to the PIC or subjacency. Instead, a principle like the Empty Category Principle appears to be needed to account for the contrast.

- (20) a. (?) Who₁ did John₂ write [$_{DP}$ his₂ report [$_{CP}$ t₁ that the mayor criticized t₁]]?
 - b. *[How angrily]₁ did John₂ write [$_{DP}$ his₂ report [$_{CP}$ t₁ that the mayor criticized the assistant t₁]]?

7.2 A weak definite analysis

As an anonymous NELS reviewer pointed out, there are proposals in the literature on definiteness that divide definite heads into two varieties: strong and weak (21) (e.g. Schwarz 2009, 2014, Simonenko 2013, 2015, among others). Briefly, strong definites require an antecedent, while weak ones do not. Instead, weak definites have a uniqueness requirement, relativized to some situation.

- (21) a. Strong definite
 - Mary went to Washington, D.C., and met the city councilor. (Felicitous only if there is already a salient city councilor in the context.)
 - b. Weak definite
 - Mary went to Washington, D.C., and met the mayor. (Felicitous when referring to the mayor of D.C., even when there is no prior mention of the D.C. mayor.)

Simonenko (2013, 2015) points out that weak definites allow wh-movement from within,

¹Interestingly, Davies & Dubinsky (2003) give the following example, which contains a verb of creation but not a bound pronoun:

⁽i) Who did Kerry start the rumor that Kelsey is fond of? (ibid. pp. 31–32, ex. 78a, their judgment)

but strong definites do not; an example of this asymmetry is given in (22). The NELS reviewer suggested that the weak/strong distinction might account for the bound possessor and demonstrative effects.

- (22) a. Strong definite

 *[Which city]₁ did Mary meet [the city councilor {of/for} t₁]?
 - b. Weak definite[Which city]₁ did Mary meet [the mayor of t₁]?

While the suggestion to assimilate the bound possessor and demonstrative effects with weak definites is intriguing, there are two reasons not to do so.

The first reason is empirical: it is not clear that there is independent evidence for treating these DPs as weak definites. More precisely, the demonstratives involved in the demonstrative effect seem to require an antecedent. Consider (23), where there is no antecedent available for *those jokes about* In this context, *wh*-movement from this definite DP feels odd. It improves, however, if an antecedent is available, e.g. if John had specifically said earlier that Mary told jokes about presidents.

(23) John: Were you at the comedy club last night? The theme was "U.S. Presidents" and Mary was the main performer.

Joe: Unfortunately, I couldn't go.
#[Which president]₁ did Mary tell those jokes about t₁?

The requirement for an antecedent is a standard diagnostic in the literature on weak/strong definites. To the extent that the demonstratives in the demonstrative effect require antecedents, they are strong definites, not weak ones.

The second reason is conceptual. Suppose we were able to extend a weak/strong definite analysis to account for the bound possessor and demonstrative effect. However, because the notions of antecedence and uniqueness do not have simple analogues in the clausal domain, this approach cannot be easily extended to the clausal domain to also account for the bound pronoun subject and existential *there* effects. Certainly, one could maintain that these are independent phenomena, one existing at a nominal level, and the other at the clausal level. But this analysis would miss generalizations about bound pronouns and bound possessors and about existential and demonstrative constructions.

7.3 The strong definite *the*

How, then, can we account for the fact that strong definite DPs with the article *the* are incompatible with *wh*-movement (24)? In this section, I sketch an analysis that is consistent with the spirit of the current phase-based proposal, but interested readers should see Davies & Dubinsky 2003, Simonenko 2013, 2015 for alternative proposals.

(24) *[Which president]₁ did Mary tell {the / Colbert's} jokes about t₁?

For concreteness, I adopt Schwarz's analysis of strong definite DPs (Schwarz 2009, e.g. p. 265, ex. 300). Schwarz argues that strong definites contain an unpronounced indexical argument. This argument appears in the specifier of a strong definite head *Def*, which takes an NP complement. Integrating this analysis with my assumptions about the syntax of DPs, I suggest that the definite head *Def* is of category Poss, and the indexical argument bears fully valued phi-features (25).

(25)
$$[DP D [PossP 1 [Poss' Def [NP jokes ...]]]]$$

Assuming that *Def* bears unvalued phi-features, as hypothesized for other Poss morphemes, one expects *Def* to agree with the indexical argument, which is sufficient to value the features on Def. This might explain why the definite article *the* never shows agreement with the NP. Further, because the indexical argument has fully-valued phi-features, when D agrees with it, D gets its features valued. As a result, the DP is a phase. *Wh*-movement from D's complement out of DP violates the PIC.

7.4 Comments on Davies and Dubinsky 2003

Lastly, I compare my proposal with Davies & Dubinsky's, which deals with wh-movement from definite DPs. In Davies & Dubinsky's proposal, definite DPs can "incorporate" at LF onto the verb under specific circumstances: when the definite DP is modified with a bound possessor or a demonstrative that contains a PRO, and when it is the object of a verb of creation. They further assume that a definite DP blocks government, and is thus a blocking category for wh-movement. However, when the definite DP incorporates at LF, the blocking effect is undone, according to the Government Transparency Corollary of Baker 1988.

This current analysis of *wh*-movement from DPs has several advantages over Davies and Dubinsky's. First, as I argued above, the current analysis follows from a more general theory of phases, on the assumption that Ds are candidate phase heads. Second, by adopting a phase-based analysis, I eliminate the need to appeal to blocking categories or government, yielding an account that is more consistent with standard Minimalist assumptions. Third, I note that Davies and Dubinsky's proposal presents a potential ordering paradox: according to them, incorporation, an LF operation, feeds *wh*-movement, which occurs in the overt syntax. This is inconsistent with conventional assumptions, where overt syntactic operations precede LF operations. In contrast, the current phase-based proposal does not depend on LF incorporation and so avoids the paradox.

8. Conclusion

Gapping across a definite DP boundary and *wh*-movement from a definite DP are typically unacceptable in English. However, they become acceptable under specific circumstances: one of the necessary conditions being the presence of a bound possessor of the DP. I proposed assimilating this bound possessor effect with the bound pronoun subject effect described by Grano & Lasnik (2018) and Barros & Frank (2017). To do so, I presented an adaptation of Grano & Lasnik's proposal, in turn lending support to that proposal. I also

showed how this proposal can be extended to address similar obviation effects involving demonstratives and existential constructions cf. Davies & Dubinsky 2003, Barros & Frank 2017. Critically, this analysis requires the assumption that definite DPs are candidate phases and can become phases in a derivation, thus providing a new argument that nominals are also locality domains.

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