**Extended phase boundaries and the Spell-out trap[[1]](#endnote-1)\***

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Grano and Lasnik (2018) (henceforth G&L) argue that phases should be extended if features are still unvalued on the complement of a phase head at the end of what would normally be a phase. Thus if pronouns are bound variables with unvalued features, then the phase that matters for resolving the unvalued features is extended. They argue for this contextual extension of phases on the basis of a wide range of phenomena that allow locality domains to cross clause boundaries just in case a matrix subject binds the subject of its complement clause (the Bound Pronoun Effect, henceforth BPE). Without challenging their empirical claims about all the other constructions they extend their generalization to, we argue that one phenomenon they regard as consistent with the BPE is not part of it. However, the one case that their generalization should not cover, namely, local anaphora, suggests that phase extension based on unvalued features is not the right explanation of the BPE and that phases for anaphora are not coordinated with phases that restrict the relations that the BPE encompasses.

G&L base their appeal on paradigms like those in (1-3) from their paper (and nine other constructions). They abstract away from differences in finiteness, which leads to sharper distinctions. *Too*-movement and *tough*-movement are generally degraded across tensed clauses, so a closer comparison should be with the fourth member of the paradigm, where, according to their generalization, the (d) examples should be better than the (b) examples. Examples (1a-c) and (3a-c) are from G&L:466-7 and (2a-d) are from G&L:470-1.

1. ***Too movement*** 
   1. This magazine is too lowbrow for John to read
   2. \*This magazine is too lowbrow for John to claim that Bill reads
   3. This magazine is too lowbrow for John to claim to read.
   4. ?This magazine is too lowbrow for John to claim that he reads.
2. ***Tough movement***
3. This book is easy for John to read
4. \*This book is easy for John to claim that Bill read
5. This book is easy for John to claim to read
6. ?This book is easy for John to claim that he read.
7. ***Multiple questions***
8. Tell me who reads which journal?
9. \*Tell me who claims that Mary reads which journal?
10. Tell me who claims to read which journal?
11. ?Tell me who claims he reads which journal?

For the purposes of this squib we will not quibble with G&L’s practice of abstracting away from finiteness in making the cut between grammatical and ungrammatical (see the results of their Mechanical Turk experiment which they use to justify this cut) and so we will assume that the (b) examples are indeed worse than the (d) examples.

Their account of this phenomenon is that binding of a subject by a nominal in a superordinate clause opens the phase so that other phase-bound relations can be licensed beyond the phase boundary. In particular, if bound pronouns are variables without features and binding provides them with features, then a bound pronoun cannot agree with T until a higher phase. They stipulate (G&L:485) that the unvalued features of T, the head of the complement of the phase head C, serve to void CP as a boundary.

1. A head X is a *phase head* if and only if
   1. X is a candidate phase head [e.g., C and perhaps v -Author], and
   2. the head of the complement to X has no unvalued features.

In the (c) examples of (1-3), the subject pronoun or PRO has no features until the next higher phase, and so the head of the complement clause (finite or not) cannot agree with its Spec,TP. Since TP is the complement of a candidate phase head C and T is unvalued, the CP is not a phase by clause (4b). Thus extractions that cannot normally pass the CP boundary are permitted when T and the bound variable subject are awaiting features that are only provided in the higher phase.

The objection we raise concerns whether or not the domain for anaphoric binding can be extended by this same mechanism. G&L claim that it can for what has been called the

“wide scope” reading that is available for examples like (5b), but not for examples like (5a).

1. a. \*Mary and Ann claim that Jill likes each other.

b. Mary and Ann claim that they like each other  
 *Intended reading:* Maryi claims that she likes Ann and Ann claims that she likes Mary.

There are reasons not to regard this effect as scopal in the relevant sense (i.e., extended scope for the universal, see Dimitriadis 2000),[[2]](#endnote-2) and so it is not likely that this phenomenon belongs with the others illustrated so far, but including *each other* interpretation in the BPE raises more fundamental questions about examples like (6a,b) and (7a,b).

1. a. \*The boys know that themselves are guilty.

b. \*The boys know what themselves are doing.

1. a. The boys know that each other is/are guilty.

b. The boys know what each other is/are doing.

G&L restrict their claim about binding to *each other*, but presumably if reciprocals and pronouns are featureless, so are reflexives. Other things being equal, we might expect all of (6a-b) and (7a-b) to be grammatical. For the ill-formedness of (6a-b) one might claim that some superficial adjustment rule changes nominative reflexives to pronominal forms (e.g., if there are no reflexive nominative forms in the lexicon, see Everaert 1990 for such considerations for Icelandic) in order to defend phase extension. However, the expanded phase approach would predict that (7a-b) should be equally acceptable, which they are not. There is no superficial adjustment rule for (7a-b) that preserves meaning. If one uses Chrome to google “what each other” or “how each other”, one finds many thousands of examples that are true embedded question reciprocal subjects (agreement with *each other* is sometimes singular, sometimes plural), but examples like (7a) (googling that each other”) are very rare, less than fifty. Although the view that CP is always a phase for nominative anaphors would also have to explain the contrast in (7), the fact in (6) is consistent with a rigid CP phase and phase extension is not (without appeal to an adjustment rule). Perhaps this is not enough to choose between theories. However, even if we take the phase extension idea to be the right analysis for (6-7), the attempt to attribute the BPE to a mechanism extending phases faces more serious difficulties.

The foundation of the G&L account is that bound pronoun subjects void phase boundaries so that other relations that are normally sensitive to phases cease to be sensitive to the voided boundary. With respect to licensing reciprocal binding, and anaphor binding in general, this produces bad results across the constructions G&L describe (wherever the construction allows us to test for it).[[3]](#endnote-3) For example, a bound subject, PRO or a pronoun, does not extend the domain for reciprocal or reflexive binding in (8).

1. a. \*John told *the boys* that he trusts *each other/themselves*.[[4]](#endnote-4)

b. \*Johnpromised *the boys* PROto trust *each other/themselves.*

*Intended reading:* John promised each of the boys that he would trust the others.

Control in *too* movement structures does not extend binding for reciprocals and reflexives ((9a) is a control for acceptability of *too* movement here).[[5]](#endnote-5)

1. a. This story is too racy for us to promise them to read ?(it) out loud.

b. \*The story is too racy for us to promise them to read (it) to each other out loud.

*Intended reading of (9b):* We would not promise each of them to read the story to the

others.

c. \*This story is too racy for us to promise them to buy (it) for themselves

Bound subjects do not extend the domain for anaphors in *tough* constructions. The well-formedness of *them*, as opposed to *themselves* and *each other*, shows that the *tough* construction is possible in these sentences.

1. a. This book was easy for John to tell *them* that he would read to *them/\*each other /\*themselves*

b. ?This book was easy for John to promise *them* PRO to read to *them/\*each other*

*/\*themselves.*

*Intended reading:* John promises each of them he will read to the others.

Bound subjects do not license extended anaphor in multiple question constructions ((11a) is a baseline to show that multiple questions are possible here).

1. a. Tell me *who* told them that *she* read him which journal?

b. Tell me *who* told them that *she* read \*each other/\*themselves/them which journal?

(if (11b) had a reading, it would be along the lines of ‘who told each of them that she read

something to the other’)

Bound subjects (where *she=every teacher*)do not extend the binding domain in family of question readings with universals, as shown in (12b), where the acceptability of the reading with *them* in (12a) shows that the construction is possible here.

1. a. Which story has *every teacher* promised them *she* would read to them*.*

b. \*Which story has every teacher promised them she would read to *themselves/each other*?

As a reviewer points out, the acceptability of the coconstrued pronouns underlined in (11b) and (12a) also show that the domain should not be extended, or these would be Principle B violations.

Finally, a bound subject does not extend the domain for anaphors in extraposition of nominals contexts, as shown by (13b-c), where (13a) (from G&L:471) is a control.

1. a. Mary claims/tends to read, every time I ask about it, all the major linguistics journals.

b*. Mary* told us *she* would read to us/\*ourselves, every time we asked about it, all the major linguistics journals.

c. \**Mary* told them *she* would read to each other, every time they asked about it, all the

major linguistics journals.

We know that *each other* can be anteceded by non-subjects, (e.g., *Mary told the girls about each other*) and that intervening nominals do not block binding of anaphors (e.g. *Those professors send good students to each other*). It seems straightforward that G&L’s theory of the BPE incorrectly licenses all of the starred possibilities in (8-13) if the account applies to binding of reciprocals and reflexives (as well as to missing Principle B violations). The obvious generalization is that reflexives and reciprocals need to be locally bound in the traditional sense. It may be that the BPE is sensitive to the presence of objects in some cases, a matter touched upon in G&L:493, fn. 24. For example, it is possible that (12a) may not be a fair test if (12b) does not allow the family of questions reading. Nonetheless, the multiple question examples and the extraposition of nominals examples do not seem affected by the presence of a matrix object.

Thus, we cannot solve the problem described above by simply eliminating the *wh-xp each other* effect from the BPE list. Even if we follow Dimitriadis in subtracting *each other* binding in subject position from an account of extended scope, we are left with a much bigger question: If the locality domain for anaphora is not regulated by phases, but everything else is (supposing that the BPE is a broad and effective generalization), why should local anaphoric domains be different?

The specific mechanism G&L appeal to, namely, treating anaphors as featureless has notable adherents (e.g., Rooryck and vanden Wyngaerd (2011) among others), but it requires domain extension for anaphors, inherently featureless, to get their features by binding. This creates the problem that objects in higher derivations must be considered as possible antecedents for anaphors – an incorrect prediction. Moreover, we have to consider whether or not the delay required to provide values to featureless elements puts too much of a burden on the locality domains that process semantic and morphophonological information. If phases are left open when there are unvalued features on phase complement heads, then the idea that local domains are favored because they permit more efficient computation is potentially compromised. The issue is illustrated by examples like (14).

1. The boys wanted PRO to promise one another PRO to be open to PRO expecting

themselves to be supportive of each other/themselves.

If Spell-out proceeds phase by phase and the vP [*be supportive of themselves*] is a phase, then it may include the specifier of the vP, which would be the higher *themselves* (or its copy when the Spec,vP moves to Spec,TP, as in most minimalist accounts). But *themselves* in Spec,vP is itself featureless.In an example like (14), all of the phases must remain open for Spell-out until *the boys* can provide the relevant features (see G&L:472, fn.7, where a version of this concern is conceded). Every theory that treats anaphors as featureless requires domain extension to overcome this “Spell-out trap”, and if it does, the incorrect binding prediction (objects in higher clauses can be antecedents) is a consequence.[[6]](#endnote-6)

The Spell-out trap is not an intrinsic problem for theories of local anaphora. An alternative approach would be to assume that features on anaphors are present in the derivation when the anaphor is inserted and are only checked to insure local antecedency (in the case of syntactic anaphors). The traditional way to do this going back to standard versions of Binding Theory (BT) (e.g., Chomsky 1981) is to merge lexical anaphors in place as part of the numeration. However, standard BT did not derive complementarity effects – Principle B is stipulated, for example. To derive complementarity effects through competition, as in Burzio 1989 or Safir 2004, insertion of lexical anaphors is part of the syntactic derivation. Competition theories then must compare derivations or outputs of derivations in order to choose the best lexical form supporting a bound reading. These competitions are essentially global constraints. The featureless anaphor theory has the advantage of permitting this choice of best bound-reading form to be determined in the morphological component after agreement has given the anaphor features and anaphoric shape (e.g., in English, pronoun-*self*). No competition is involved. On the other hand, the featureless anaphor theory must then appeal to extended phases to avoid a Spell-out trap, and then bad binding consequences ensue.

It is certainly possible to craft a theory that determines the morphological shape of locally bound elements without extending phases or assuming that language-specific lexical items are merged and checked for well-formedness in competitions to derive complementarity effects. My approach in Safir 2014 suggests that a universal bound element, the “one true anaphor” (or D-bound, as I call it) is inserted with random phi-features and is well-formed if it is bound. If the one true anaphor is bound within its phase, then it will have the morphological shape of a local anaphor and will be spelled out as such if the language has special morphology for local anaphors. On this account, Principle B effects for pronouns (they cannot have a local binder) are a function of shape concord imposed by binding within a phase (there is no competition between derivations or representations to get complementarity effects to follow). Since a pronoun is the default form of the one true anaphor, it is predicted that Principle B effects will be absent if a language has no special morphology for local anaphors (Old English, for example, did not). The φ-features of the bound form must then be consistent with its antecedent along the lines of a presuppositional theory of antecedent agreement, or at least a mechanism that requires matching (e.g., Collins and Postal 2012 as an alternative), although for the purpose at hand, I need not commit to a particular matching account here. On such an approach to intrinsic features, all the features necessary for morphological Spell-out are available at the end of each vP and CP phase along with the relation to the local antecedent, if there is one. As in distributed morphology,[[7]](#endnote-7) the spell-out of the universal bound element with its φ-features and antecedent concord (local or non-local) will depend on what forms are available in the lexicon to match. No extension of phases is necessary to account for anaphoric binding or locally required morphology[[8]](#endnote-8) – local binding is always canonically phase-internal. My own approach (Safir, 2014) is so far the only non-phase-extending alternative I are aware of that both accounts for complementarity effects and limits them to differential Spell-out in morphology, rather than by appeal to competing derivations or representations.[[9]](#endnote-9)

What is at stake is not only whether there can be a unified approach to opaque domains, but how the potential transparency of a domain is achieved. My proposal in Safir (2014) to keep feature valuation local for Spell-out and leaving agreement to feature matching is inimical to G&L’s account of phase extension. If bound pronouns have features, then the features of T will not go unvalued and phases cannot be extended under (4). So in addition to contracting the reach of the BPE, I call into question the mechanism by which G&L allow phases to be extended. It may be correct to account for the BPE by extending phases, but by a different mechanism that does not induce a Spell-out trap and while avoiding the bad consequences of extending phases for anaphoric domains. It would be a more ambitious project to explore a different mechanism to account for the BPE, which, on the basis of these considerations, needs a better explanation, but that is more than we have to offer.

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2. As Dimitriadis, p.116, points out that the scopal account does not account for the relevant reading for (i).

   1. The lawyers that represent them say they will sue each other.

   “A correct translation should state that each lawyer, *x*, says that *x’*s client will sue the other clients (or the other lawyer’s clients).” This reading is not achieved by giving the universal wide scope. Dimitriadis develops an alternative account. [↑](#endnote-ref-2)
3. Other constructions G&L use to exemplify the BPE, such as ACC, multiple sluicing, gapping and comparative deletion, all involve ellipsis that would posit source sentences that are themselves impossible. [↑](#endnote-ref-3)
4. It is not clear what the status of (i) is.

   In order to get them to fight, John told the girls that they were stronger than each other.

   \*In order to get John to fight one of them and not the other, the girls told John that he was stronger than each other.

   *Intended reading:* Each of the girls told John that that he was stronger than the other girl.

   To my ear, (i) is acceptable with the non-nonsensical interpretation, but less so than the wide scope interpretation of (5b). If so, then (ii) is also a problem. [↑](#endnote-ref-4)
5. Some might find (9a) less acceptable than (2a), though (2a) is fine if a resumptive pronoun is used (and phase neutralizations should be unaffected). [↑](#endnote-ref-5)
6. A reviewer points out that G&L (pp. 491-493) countenance pronouns entering the derivation with features but those are not cases where there is phase extension. Pronouns inserted with features must match the presuppositions of their antecedents, so *him* could be bound by *every man* but would induce presupposition failure if bound by *every woman*. However, they explicitly assume that anaphors like *each other* enter the derivation without features and pronouns only enter the derivation without features when their antecedents are in the same domain (so that feature transmission from their antecedents does not violate the PIC). Allowing pronouns with features to enter the derivation provides latitude with respect to non-local binding but does not resolve the problems they face for examples where their account of the BPE extends domains across several clauses. [↑](#endnote-ref-6)
7. These remarks are included in part to address a reviewer’s concern that direct insertion of specific lexical items in derivations would have negative effects for distributed morphology approaches. As the text explains, Safir’s (2014) approach to intrinsic features of anaphors is consistent with distributed morphology assumptions. [↑](#endnote-ref-7)
8. For a particular proposal that accounts for reciprocal interpretation and morphology, see Safir and Selvanathan 2017, where it is argued that a functional head on the vP spine is the source of reciprocal meaning, not the reciprocal argument anaphor. The reciprocal anaphor is morphologically realized in concord with the null head on the vP spine, which in some languages is overt, even when an argument anaphor fills object position. [↑](#endnote-ref-8)
9. Reuland’s (2011) approach also might be regarded as distinguishing local and distance spell-out effects, though his account relies on competing representations of chains. Chains are not normally taken to be entities of syntactic theory in recent accounts in favor of sets of occurrences. For example, chains are explicitly rejected in Chomsky 2001:40 and are regarded as “false” by comparison with sets of occurrences in Chomsky 2004:126. Reuland’s CHAIN, a crucial notion in his theory, is also not equivalent to a set of occurrences, so the matter is not just terminological. [↑](#endnote-ref-9)