



## A Schrift to Fest Kyle Johnson

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# Agreement and $\nu$ P phases\*

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## 1 Introduction: $\nu$ P phases and the timing of Spell-Out

Since Chomsky 2000, 2001, it is widely assumed that syntactic structure building proceeds in phases, whereby the complement of a phase head is sent to the interfaces upon completion of the phase and thereby rendered inaccessible to subsequent syntactic operations. One consequence of this model is that all dependencies across a phase boundary must be mediated via the phase edge and hence be indirect. It is furthermore standardly assumed within this framework that the verbal domain comprises two phase-defining heads (C and  $\nu$ ) and that consequently all operations across CP and  $\nu$ P phases must be established via their edges. In this squib, I will present evidence from Hindi-Urdu (henceforth Hindi) that suggests that it is possible to establish an Agree relationship across  $\nu$ P phases that does not invoke their edge. In this,  $\nu$ P phases strikingly differ from CPs. I argue that these dependencies pose a challenge to the view that  $\nu$ P is a phase alongside CP.

Let us start by considering the version of the Phase Impenetrability Condition (PIC) in Chomsky 2000: 108, according to which a phase complement is spelled out and rendered inaccessible as soon as the next head is merged.

(1) *Phase Impenetrability Condition (Chomsky 2000 version)*

In phase  $\alpha$  with head H, the domain of H is not accessible to operations outside of  $\alpha$ , only H and its edge are accessible to such operations.

As has sometimes been noted, the locality emerging from (1) is arguably too strict when it comes to  $\nu$ P phases, as the complement VP would be rendered inaccessible as soon as T is merged. This would rule out agreement between T and VP-internal material as in (2). Yet such configurations are attested, e.g., agreement with nominative objects in Icelandic and other languages (e.g., Richards 2011: 78).

(2) [TP DP T<sub>[u $\phi$ ]</sub> [ $\nu$ P  $\nu$  [ $\nu$ P V DP<sub>[ $\phi$ ]] ]]</sub>

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There are at least two solutions to this problem. One is to weaken the PIC in (1); the other is to retain (1) but to question the assumption that  $vP$  is a phase. Chomsky (2001) pursues the first option. He proposes the redefinition of the PIC in (3), which delays the timing of Spell-Out until the next-higher *phase* head is merged (Chomsky 2001: 14). On this revised PIC, the VP in (2) is not spelled out until C is merged. Agreement between T and a VP-internal object is then correctly allowed.

(3) *Phase Impenetrability Condition* (Chomsky 2001 version)

The domain of phase head H is not accessible to operations at the next-higher phase ZP; only H and its edge are accessible to such operations.

(3) makes an immediate prediction: If there is more than one  $vP$  intervening between T and the VP in (2), agreement between T and VP-internal material should be impossible because VP is spelled out as soon as the higher  $vP$  is merged, hence before T can agree. This paper claims based on converging evidence from  $\phi$ -agreement and *wh*-licensing in Hindi that this prediction is not borne out. Rather, this evidence suggests that agreement relations can be established across an unbounded number of  $vP$ s. This finding is unexpected on both (1) and (3). I conclude from these considerations that delaying the timing of Spell-Out does not seem to provide a comprehensive solution to the underlying problem. I then suggest that if  $vP$  is not a phase, the problem does not arise to begin with.

## 2 The (non-)locality of $\phi$ -agreement in Hindi

In Hindi, a verb agrees with the structurally highest argument that does not bear an overt case marker. This allows for object agreement if the subject is overtly case-marked (e.g., with ergative case). Crucially for our purposes, there is good reason to believe that object agreement in Hindi is not dependent on movement of the object. First, there is no indication that agreeing objects occupy a structural position different from that of non-agreeing ones (Bhatt 2005). Second, objects that resist movement can nonetheless control verbal agreement (Bhatt & Keine to appear). This is illustrated with the idiom *bhains ke aage biin bajaa*, ‘do something futile’, (*lit.* ‘play the flute in front of buffalo’).<sup>1</sup> On the idiomatic reading, the object *biin*, ‘flute’, can control object agreement (4a), but it resists being moved (4b).

- (4) a. raam-ne bhains ke aage biin bajaa-yii  
 Ram-ERG buffalo in.front.of flute.F.SG play-PERF.F.SG  
 ‘Ram did something futile.’ (*lit.* ‘Ram played the flute in front of buffalo.’)

<sup>1</sup> I thank Bhamati Dash for suggesting this idiom to me.

- b. #*biin*<sub>i</sub> raam-ne bhains ke aage *t*<sub>i</sub> bajaa-*yii*  
 flute.F.SG Ram-ERG buffalo in.front.of play-PERF.F.SG  
 ‘The flute, Ram played in front of buffalo.’ (*idiomatic reading deviant*)

For concreteness, I assume, following Bhatt (2005), that the verbal  $\phi$ -probe is located on T and that it enters into an Agree relationship with the highest visible (i.e., not overtly case-marked) argument in its c-command domain, without requiring movement of this argument. Object agreement in (4a) is then established as in (2).

As noted, object agreement as in (2) is compatible with the revised version of the PIC in (3). We will now turn to configurations in which more than one vP intervenes between T and the VP-internal object. To achieve this configuration, I will consider structures in which a verb agrees with an object embedded inside a nonfinite complement clause to this verb, i.e., *long-distance agreement* (LDA) configurations (see Mahajan 1990, Butt 1995, Bhatt 2005, Chandra 2007, Keine 2016, 2017). A relevant example is provided in (5), where the idiom from (4) is located inside a nonfinite complement clause. The embedded object *biin*, ‘flute’, can then control feminine singular agreement on the matrix verb *caahii*, ‘want’.<sup>2</sup>

- (5) raam-ne [bhains ke aage *biin* bajaa-*nii* ] caah-*ii*  
 Ram-ERG buffalo in.front.of flute.F.SG play-INF.F.SG want-PERF.F.SG  
 ‘Ram wanted to do something futile.’ (*idiomatic reading possible*)

There is evidence that the nonfinite clause in LDA configurations obligatorily contains a vP projection. Bhatt (2005) shows that they license accusative case and Davison (2010) argues they project a PRO subject. Both are properties of *v*. These nonfinite clauses moreover lack a CP layer (Dayal 1996, Bhatt 2005, Chandra 2007).

Furthermore, Bhatt (2005) and Keine (2016, 2017) claim that, just like local agreement, LDA in Hindi does not require movement of the agreement controller. First, elements that resist movement—such as *biin*, ‘flute’, in (5) on the idiomatic reading (recall (4b))—can control LDA. Second, there is no evidence that objects

<sup>2</sup> LDA is generally optional, i.e., masculine singular default agreement is also possible in most cases. For cases in which LDA is either prohibited or obligatory, see Butt 1995, Bhatt 2005, and Keine 2016, 2017.

One intriguing property of LDA in Hindi that I cannot do justice here for reasons of space is that the infinitival verb also agrees. It is therefore a priori possible that LDA is established through cyclic agreement à la Legate 2005, in which case the conclusions in this section could be circumvented. However, Bhatt (2005) and Keine (2016) argue that a cyclic-agreement derivation is problematic for LDA in Hindi and that infinitival agreement is merely a byproduct of Agree between matrix T and the embedded object. I will adopt this view in what follows. See these references for discussion.

that control LDA systematically occupy a position different from objects that do not.

Putting these pieces together, we arrive at the conclusion that the agreement relationship between the matrix T and *biin*, ‘flute’, in (5) is established across *two* *v*P projections (one in each clause) and without the mediation of movement, as schematized in (6), using a right-branching structure for readability.<sup>3</sup>

$$(6) \quad [TP \ T_{[u\phi]} \ \underbrace{[vP \ v \ [VP \ V \ [nonfinite \ \underbrace{[vP \ v \ [VP \ V \ DP_{[\phi]} \ ]}] ] ]}_{clause} \ ]]]]]$$

If these considerations are on the right track and (5) has the structure in (6), then the PIC in (3) is too restrictive, as it rules out agreement in this structure. This is because the embedded VP containing the object is spelled out and rendered inaccessible as soon as the matrix *v* head is merged.<sup>4</sup> Agree between the matrix T and the embedded object should thus be impossible. The same problem of course arises for the original version of the PIC in (1). Simply delaying the point of Spell-Out to the next-higher phase head is thus sufficient for simple object agreement such as (2), but it still conflicts with more complex object agreement like (6). Delaying the timing of Spell-Out does not seem to offer a real solution to the underlying problem.

It would be possible, of course, to delay the Spell-Out of a phase even further (i.e., when the phase head after the next-higher phase head is merged). This would again merely postpone the problem, but not solve it. It is possible in Hindi to embed a nonfinite clause inside another, as in (7). While the resulting structure is difficult due to the center embedding, LDA between the matrix verb *caahii* and the embedded object *biin* across the two nonfinite clause boundaries is nonetheless possible:

- (7) ?raam-ne [[bhains ke aage *biin* bajaa-nii ] shuruu  
 Ram-ERG buffalo in.front.of flute.F.SG play-INF.F.SG start  
 kar-nii ] caah-ii  
 do-INF.F.SG want-PERF.F.SG  
 ‘Ram wanted to start doing something futile.’ (*idiomatic reading possible*)

In (7),  $\phi$ -agreement crosses three *v* projections, one in each clause:

$$(8) \quad [TP \ T_{[u\phi]} \ \underbrace{[vP \ v \ [VP \ V \ [nonfinite \ \underbrace{[vP \ v \ [VP \ V \ [nonfinite \ \underbrace{[vP \ v \ [VP \ V \ DP_{[\phi]} \ ]}] ] ]}_{clause} \ ] ]}_{clause} \ ] ]}_{clause} \ ]]]]]]]]]$$

<sup>3</sup> I will remain agnostic with respect to the category label of the nonfinite clause as it is not relevant to the argument.

<sup>4</sup> Following Chomsky (2000, 2001), one might entertain the possibility that one or both of the *v*'s in (6) are ‘defective’ and hence weak phases that do not trigger Spell-Out. While this is a possibility, it should be noted that both introduce an external argument and arguably assign case. In Chomsky’s system, there is hence little independent justification for treating them as defective.

In sum, I have presented evidence that indicates that  $\phi$ -agreement in Hindi is able to cross an arbitrary number of vPs. This is unexpected if vP is a phase and its complement hence a domain of Spell-Out, irrespective of the timing of Spell-Out.

Interestingly, CPs behave very differently from vPs for agreement. Finite clauses, which are uncontroversially CPs in Hindi, do not allow LDA into them. Consequently, an element inside an embedded finite clause cannot be targeted by Agree from the matrix T. This is illustrated in (9), where agreement between *soc*, ‘think’, and *ghazal*, ‘ghazal’, is impossible. Only default agreement on the matrix verb is possible.

- (9) laṛkō-ne soc-aa/\*-ii [CP ki monaa-ne ghazal  
 boys-ERG think-PERF.M.SG/\*-PERF.F.SG that Mona-ERG ghazal.F  
 gaa-yii thii ]  
 sing-PERF.F.SG be.PAST.F.SG

‘The boys thought that Mona had sung ghazal.’ (Bhatt 2005: 776)

These examples highlight a qualitative empirical difference between CPs and vPs with respect to their effects on the locality of  $\phi$ -agreement. Agreement may proceed over a potentially unbounded number of vPs, but not over CPs. The next section will present converging evidence from *wh*-licensing in Hindi.

### 3 The (non-)locality of *wh*-licensing

Hindi does not have obligatory overt *wh*-movement to SpecCP, though *wh*-phrases may optionally scramble in the same way as non-*wh* elements (see Dayal 2017 and references cited there).

- (10) raam-ne kyaa khaa-yaa thaa  
 Ram-ERG what eat-PERF.M.SG be.PAST.M.SG

‘What did Ram eat?’ (Mahajan 1990: 125)

There is evidence from focus intervention effects (Beck 2006) which indicates that Hindi does not employ covert *wh*-movement either (pace Mahajan 1990 and Dayal 1996). (11) demonstrates that Hindi exhibits focus intervention effects, a fact already noted by Beck (2006). In (11a), the NPI *kisii-ne-bhii*, ‘anyone’, intervenes for the *wh*-licensing relationship between the in-situ *wh*-element *kis-ko*, ‘who-DAT’, and its licensing C head. If the *wh*-element is scrambled over the NPI, as in (11b), the intervention effect vanishes, a hallmark property of focus intervention effects.





## 4 Conclusion

This paper started out with the observation that  $vP$  phases combined with immediate Spell-Out (i.e., the PIC in (1)) is arguably too restrictive empirically in that it rules out attested Agree dependencies. Based on  $\phi$ -agreement and *wh*-licensing in Hindi, I have argued that delaying the timing of Spell-Out does not provide a comprehensive solution to this problem because the number of  $vP$  projections that can intervene is unbounded. Furthermore, a general delay in phasal Spell-Out (as in ((3))) would likewise weaken the locality of CP phases and put them on par with  $vPs$ —an unwarranted consequence, as we have seen. The transparency of  $vPs$  for  $\phi$ -agreement and *wh*-licensing in Hindi thus poses an interesting challenge to the claim that  $vPs$  are phases alongside CPs.<sup>5</sup>

I would like to suggest a simple but slightly more radical way of addressing this puzzle: If  $vPs$  are *not* phases, then the fact that they can be effortlessly crossed by agreement dependencies is in fact predicted, and so is their contrast to CPs. The kind of timing problem that I have laid out here then does not arise in the first place and the more restrictive version of the PIC in (1) can be maintained.

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<sup>5</sup> I argue in Keine 2016, 2017 that CP phases by themselves are not strong enough to capture the locality properties of  $\phi$ -agreement and *wh*-licensing and Hindi, but this complication does not affect the problem I have presented here for  $vP$  phases, as here  $vP$  phases are too restrictive.

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