Agreement reversals and the cyclicity of Agree

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Claim: The classical view that Agree is invariably downward (Chomsky 2000) has recently been challenged by proposals that Agree is either invariably upward (Zeijlstra 2012, Wurmbrand 2012) or bidirectional (Carstens 2016). Based on novel evidence from Hindi, we argue that a probe that normally probes downward may also agree upward with an element moved into its specifier, a pattern that is normally masked by a derivational downward-Agree bias. This pattern provides novel support for the cyclic Agree model of Béjar & Rezac (2009) (also see Carstens's 2016 'delayed valuation'). Our account expands the empirical scope of cyclic Agree by extending it beyond hierarchy effects between coarguments and by demonstrating that cyclic Agree effects arise in movement contexts as well.

Top-down agreement: Verb agreement in Hindi is generally top-down: the verb agrees with the structurally highest DP that is not overtly case-marked. In (1), both the subject *laṛke* and the object *kitaab* are not case-marked and hence eligible agreement targets. In this case, agreement has to be controlled by the subject *laṛke*. In (2), the subject is case-marked and verbal agreement is consequently controlled by the object *kitaab*. Agreement is obligatory in (1)/(2) and not affected by word order permutations. In the absence of a viable agreement controller, the verb exhibits masculine singular default agreement.

(1) laṛke kitaab paṛht-e/*-ii hãĩ
boys.M book.F read.HAB-M.PL/*-F.SG AUX

(2) laṛkõ-ne kitaab paṛh-ii/*-e hai
boys.M-ERG book.F read.PFV-F.SG/*-M.PL AUX

Hindi also exhibits long-distance agreement (LDA), in which a verb agrees with the object of an embedded infinitival clause (3). LDA alternates with default agreement. Following Bhatt (2005), we assume that infinitival clauses are ambiguous between a structure that is accessible to agreement (yielding LDA) and one that is not (yielding default). Crucially, agreement in these constructions exhibits a subject preference as well. If the matrix subject *shikṣak* is not overtly case-marked, as in (4), it has to control verbal agreement, rendering LDA impossible. This agreement pattern is thus 'top-down' in that agreement with a structurally lower DP is possible only if agreement with the structurally higher DP is impossible.

(3) shikṣakõ-ne [raam-ko kitaab paṛhne] dii/*diye/diyaa
teachers.M-ERG Ram-DAT book.F read.INF let.F.SG/*let.M.PL/let.DFLT
'The teachers let Ram read a book.' (*subject overtly case-marked → LDA or default agreement*)

(4) shikṣak [raam-ko kitaab paṛhne] {*detii hãĩ /dete hãĩ /*detaa hai }
teachers.M Ram-DAT book.F read.INF *let.F.SG AUX/let.M.PL AUX/*let.DFLT AUX
'The teachers let Ram read a book.' (*subject not overtly case-marked → only subject agreement*)

A-scrambling can feed object agreement: We provide evidence that object scrambling can feed LDA in at least some cases. In (5), the infinitival clause is extraposed and LDA into it is degraded. Only default agreement is possible. Extraposed clauses are thus islands for agreement, plausibly a freezing effect.

(5) shikṣakõ-ne t_1 diyaa/*dii [raam-ko kitaab paṛhne]$_1$
teachers-ERG let.DFLT/*let.F.SG Ram-DAT book.F read.INF (*no LDA into extraposed clauses*)

Crucially, if the embedded object has been moved out of the extraposed clause, LDA is again possible:

(6) kitaab$_2$ shikṣakõ-ne t_1 dii [raam-ko t_2 paṛhne]$_1$
book.F teachers-ERG let.F.SG Ram-DAT read.INF (*object scrambling feeds agreement*)

This indicates that agreement in (6) is with the landing site of the object, as its base position in the extraposed clause is not accessible to agreement (see (5)). (6), then, instantiates a configuration in which object scrambling feeds agreement. There is furthermore evidence that only A-scrambling may feed agreement. In (7), the moved object unambiguously targets an A-position, as diagnosed by the absence of weak crossover (Mahajan 1990). Here, LDA is obligatory, i.e., default agreement as in (5) is not possible.

(7) har kitaab$_2$ [unke$_2$ lekhakõ-ne] t_1 dii/*diyaa [raam-ko t_2 paṛhne]$_1$
every book.F its authors-ERG let.F.SG/*let.DFLT Ram-DAT read.INF
'For every book x, x's authors let Ram read x.' (*object A-scrambling feeds agreement*)

By contrast, $\overline{\text{A}}$-scrambling does not feed agreement. In (8), the verb *kah* 'tell' embeds a case-marked clause. Such clauses allow $\overline{\text{A}}$-scrambling out of them, but not A-scrambling, as evidenced by weak crossover: the pronoun *unke* may not be bound by the moved DP. Crucially, these $\overline{\text{A}}$-scrambled DPs cannot

control ϕ-agreement. This holds irrespective of whether the embedded clause is extraposed or not.

(8) har kitaab$_2$ [unke$_{3/*2}$ lekhakõ-ne] t_2 kahaa/*kahii [raam-se t_1 paṛhne-ko]$_1$
every book.F its authors-ERG say.DFLT/*say.F.SG Ram-INSTR read.INF-DAT
'Its$_3$ authors told Ram to read every book$_2$.' (*object $\overline{A}$-scrambling does not feed agreement*)

This constellation of facts indicates that agreement in (7) is established with the A-landing site of the moved object and not with, e.g, an intermediate position, as such intermediate positions would also be created by $\overline{A}$-scrambling as in (8). Because agreement is obligatory in (7), it follows that A-scrambling of the object invariably places it into a position in which it is accessible to the matrix ϕ-probe [$u\phi$].

Bottom-up agreement: Despite the fact that object A-scrambling enables agreement (7), subject agreement, if possible, takes priority over object agreement in these constructions, despite the fact that the subject is structurally lower. In (9), the subject *unke lekhak* is not overtly case-marked and thus accessible for agreement. Verbal agreement is then invariably with this subject, not with the A-moved object.

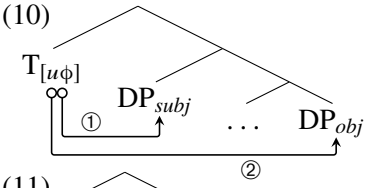
(9) har kitaab$_2$ [unke$_2$ lekhak] t_1 {dete hãĩ /*detii hai /*detaa hai } [raam-ko t_2 paṛhne]$_1$
every book.F its authors.M let.M.PL AUX/*let.F.SG AUX/*let.DFLT AUX Ram-DAT read.INF
'For every book x, x's authors let Ram read x.' (*subject agreement preempts object agreement*)

In (9), (i) the object *har kitaab* is in a position accessible to agreement (see (7)), and (ii) it is structurally higher than the subject (as evidenced by pronominal binding). The fact that subject agreement nonetheless takes priority in (9) descriptively instantiates bottom-up agreement in that agreement with the structurally higher position (the A-scrambling landing site) is possible only if agreement with a lower position is not.

Directionality reversal: In terms of the structural positions involved, these data instantiate a directionality reversal: In (4) agreement has to be with the structurally higher DP; in (9) it has to be with the structurally lower one. Remarkably, this reversal arises for a single probe in a single construction, suggesting that probing directions are at least partly variable. This reversal is problematic for accounts in which Agree is only upward or only downward. For instance, a downward Agree analysis may capture (4) by locating [$u\phi$] above the subject, but not (9): If [$u\phi$] is placed above the A-scrambled object in (9), the object should incorrectly intervene for, and hence preempt, subject agreement. Alternatively, if [$u\phi$] is placed between the object and the subject in (9), object scrambling should never feed agreement, contrary to (7).

Account: We propose that this paradox can be resolved if Agree is narrowly bidirectional, allowing not only downward search but also Agree with specifiers as a secondary option (Béjar & Rezac's 2009 cyclic Agree, cf. Carstens's 2016 'delayed valuation'). Adopting these proposals, a probe first searches through its c-command domain (first-cycle Agree). If this Agree fails, the probe searches upward into its specifier (second-cycle Agree) once this specifier is merged. Specifically, we propose that in Hindi [$u\phi$] is located on T. Upon being merged, it searches its c-command domain (i.e., vP), as in (10), agreeing with the closest accessible goal. Due to minimality, object agreement (②) obtains only if subject agreement (①) fails, yielding top-down agreement in (1)–(4). Furthermore, we propose that A-scrambling lands in a position higher than [$u\phi$], specifically in an (outer) TP specifier (11). Agreement with A-moved objects then arises as a second-cycle Agree effect if first-cycle Agree fails, i.e., if vP does not comprise an accessible goal. This is the case in (7), where the subject, being case-marked, is not accessible to agreement and the pre-scrambling position of the object is inside an inaccessible extraposed clause (cf. (5)). A-scrambling of this object (② in (11)) thus feeds second-cycle Agree (③). Crucially, due to cyclicity, second-cycle Agree is possible only if first-cycle Agree (① in (11)) has failed. Consequently, if the subject is a licit agreement target, as in (9), Agree is always successful in the first cycle (i.e., before object scrambling). This derives both the primacy of top-down agreement and the directionality reversal in (9) from the cyclicity of (Internal) Merge and Agree. Assuming further that $\overline{A}$-scrambling targets a TP-external position, the claim that upward Agree is locally bounded by the phrase level derives that $\overline{A}$-scrambling does not feed agreement (8). Finally, default agreement in Hindi arises only if first *and* second-cycle Agree have failed, supporting Preminger's (2014) proposal that default agreement is the spellout of an unvalued probe at PF.

(10)



(11)