Crossover asymmetries

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Abstract. Weak crossover and strong crossover are standardly attributed to at least partially different constraints, despite clear parallels in their distribution in English. Specifically, one common analysis of strong crossover, originally proposed by Chomsky (1981), attributes it to Condition C, which plays no role in the analysis of weak crossover. This line of analysis predicts that the two types of crossover could in principle part ways, resulting in configurations that exhibit strong crossover, but not weak crossover. In this paper, we argue that Hindi-Urdu scrambling bears out this prediction. We show that this scrambling displays secondary strong crossover effects, but not secondary weak crossover effects, and furthermore that the distribution of strong crossover correlates with the distribution of Condition C connectivity. We furthermore argue that the distribution of strong crossover (and of Condition C connectivity) is crucially conditioned by case. We propose an analysis of these generalizations that extends Thoms & Heycock's (2022) DP Late-Merge account to scrambling, and we discuss the implications of this analysis.

Keywords. scrambling, weak crossover, strong crossover, secondary crossover, Condition C, Hindi-Urdu, case, Late Merge, multidominance

1. Introduction

As is well-known, it is typically impossible for an A′-moved item to bind a pronoun from its landing site, even if this landing site c-commands the pronoun and the standard conditions for binding appear to be met. Following the seminal work of Postal (1971) and Wasow (1972), this restriction is standardly referred to as *crossover*. Two types of crossover are typically distinguished. *Strong crossover* (SCO) arises if the bound pronoun c-commands that A′-trace (1); *weak crossover* (WCO) arises if

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the pronoun does not c-command the A′-trace (2).[1] See Safir (2017) and Lasnik & Funakoshi (2017) for recent overviews.

(1) *Strong crossover*

a. *DP_1 ... $pron_1$ ... t_1

b. ***Who$_1$** does **she$_1$** like ___$_1$?

(2) *Weak crossover*

a. *DP_1 ... [$_{DP}$ ... $pron_1$ ...] ... t_1

b. ***Who$_1$** does [**her$_1$** mother] like ___$_1$?

In English, SCO and WCO correlate with each other across the A/A′-distinction. A′-movement is subject to both, whereas A-movement is subject to neither.

(3) a. *A′-movement is subject to SCO*

*__Who$_1$__ does __she$_1$__ like ___$_1$?

b. *A-movement is not subject to SCO*

__Every girl$_1$__ seems to __herself$_1$__ ___$_1$ to be a genius.

(4) a. *A′-movement is subject to WCO*

*__Who$_1$__ does [__her$_1$__ mother] like ___$_1$?

b. *A-movement is not subject to WCO*

__Every girl$_1$__ seems to [__her$_1$__ dad] ___ to be genius.

Despite the parallels in their distribution, SCO and WCO are standardly analyzed quite differently. Following Chomsky (1981), who builds on Wasow (1972) and Freidin & Lasnik (1981), SCO is often analyzed as a Condition C effect. This account treats the trace left behind by A′-movement as an R-expression, subject to Condition C of the binding theory and thus required to be globally A-free. This requirement is violated in (3a) because the trace is A-bound by the coindexed pronoun *she*. This account does not extend to WCO. In (4), the pronoun does not c-command the A′-trace, and Condition C is thus not violated. WCO, then, has to be ruled out in a different way, and here a wide range of analytical options have been explored. One family of accounts invokes constraints that

[1] See also Lasnik & Stowell (1991) for a third type: weakest crossover, which largely corresponds to the surprising absence of a crossover effect with certain instances of A′-movement.

specifically rule out WCO configurations. Examples include Koopman & Sportiche's (1983) *Bijection Principle* and Safir's (1984) *Parallelism Constraint on Operator Binding*. These accounts involve a condition that takes effect only if the pronoun does not c-command the trace, hence in WCO configurations but not in SCO configurations. Another family of accounts postulates constraints that rule out both SCO and WCO configurations, such as Postal's (1971) *Crossover Principle*, Van Riemsdijk & Williams's (1981) *NP structure* account, Reinhart's (1983) A-binding condition, and Safir's (2004, 2019) *Independence Principle*. For example, a constraint to the effect that pronominal binding is possible only from a c-commanding A-position (Reinhart 1983, Van Riemsdijk & Williams 1981) rules out both SCO (3a) and WCO (4a) in a uniform manner. Nonetheless, it is common for such accounts to *also* adopt an account of SCO in terms of Condition C or a related principle, so that SCO configurations are then in fact ruled out twice (e.g., Grodzinksy & Reinhart 1993: 76, fn. 6, Reinhart & Reuland 1993: 697, fn. 38, Ruys 2000: 515, fn. 3).

The analytical landscape is thus interestingly complex: in spite of the parallels in the distribution of SCO and WCO in (3) and (4), SCO is ruled out by at least partially different constraints than WCO. The typical empirical motivation for dissociating SCO and WCO in this way is that SCO leads to a greater degree of degradation than WCO (Wasow 1972, Grodzinksy & Reinhart 1993: 76, fn. 6; see Ross et al. 2022 for a recent experimental confirmation of this difference). While this is certainly suggestive, it is worth noting that standard models of syntax only model a binary distinction between grammatical and ungrammatical structures, not degrees of ungrammaticality or acceptability. As such, it is perhaps not clear that different grammatical constraints must be involved just because two structures differ in their degree of degradation. Clearer empirical evidence for a Condition C based account of SCO would come from differences in the *distribution* of these effects, rather than their *severity*. If SCO is ruled out by Condition C but WCO is not, then we might expect to find movement types that display SCO, but not WCO.

In this paper, we argue that Hindi-Urdu (henceforth Hindi) bears out this prediction. We show that local scrambling in Hindi is not subject to WCO, but it is subject to SCO. We draw in particular on so-called *secondary crossover effects* (Van Riemsdijk & Williams 1981, Safir 1984, 1999, Postal 1993): configurations in which the quantifier that binds the pronoun is not the moving element itself but rather embedded inside the moving element. We show that in these configurations, the distribution

of SCO and WCO part ways in Hindi in systematic ways: scrambling is not subject to (secondary) WCO, but it is subject to (secondary) SCO. We furthermore show that the distribution of (secondary) SCO in Hindi aligns with the distribution of Condition C. This provides strong support for the view that SCO is a Condition C effect, analytically distinct from the factors that underlie WCO.

The account of the Hindi pattern we develop here builds on a long-standing strand of research that has argued that absence of Condition C connectivity is the result of *Late Merge*—addition of syntactic material to the landing site of a moved expression (Lebeaux 1988, 2000 and much subsequent work). Due to Late Merge, this syntactic material is then not present in the launching site of the movement, resulting in the absence of Condition C effects. While this line of analysis has traditionally been applied to adjuncts, recent work has extended it to arguments as well. We draw in particular on recent work by Thoms (2019) and Thoms & Heycock (2022), who analyze Condition C obviation as the result of *External Remerge:* Merge of a bare NP in the pre-movement position and late addition of a DP shell in the landing site. To limit such a derivation to English A-movement, Thoms & Heycock (2022) propose (following Takahashi 2006 and Takahashi & Hulsey 2009) that External Remerge is available only if the movement precedes case assignment (which is the case for English A-movement but not for English A′-movement), a view additionally supported by Gong (2022a,b). We show that this account neatly generalizes to Hindi scrambling: like English A′-movement, Hindi scrambling follows case assignment, and so an External-Remerge derivation is ruled out, producing Condition C connectivity and, by extension, SCO.

We would like to note at the outset that the focus of this paper is (secondary) SCO and how to analyze it. We will be less concerned with the proper analysis of WCO. The comparison between the distribution of SCO and WCO in Hindi shows that SCO must be conditioned by at least partially different constraints than WCO, and it is these constraints that we investigate here. Correspondingly, we will have little to say about why Hindi scrambling does not show WCO effects, and we believe that ultimately the analytical choice does not matter for our analysis of SCO.

This paper is structured as follows: Section 2 demonstrates the diverging distribution of SCO and WCO in Hindi. Sections 3 and 4 present our analysis of WCO and SCO, respectively, which is then applied to the Hindi data in section 5. Section 6 then assesses a prediction made by this account, according to which SCO should exceptionally be obviated in Hindi scrambling if the scrambling

precedes case assignment. Finally, section 7 summarizes, and section 8 considers the broader implications of the account for the typology of movement types.

2. Strong and weak crossover in Hindi local scrambling

This section demonstrates that SCO and WCO do not coincide in Hindi local scrambling. By "local scrambling", we mean scrambling that does not cross a finite clause boundary. Hindi also has long-distance scrambling (scrambling across a finite clause boundary), which consistently displays both SCO and WCO effects and thus patterns like English A′-movement in these respects (Mahajan 1990, Gurtu 1992). Long-distance scrambling will play no role in this paper, and so we will use the term "scrambling" to refer to local scrambling in what follows.

2.1 Simple crossover effects

It is well-established that local scrambling in Hindi is not subject to WCO (Déprez 1989, Mahajan 1990, 1994, Gurtu 1992). This is illustrated in (5), where scrambling of the object *har laṛke-ko* 'every boy-ACC' over the subject *uskii behin-ne* 'his sister-ERG' makes binding of a subject-internal pronoun possible, a binding that is impossible in the absence of scrambling.

(5) *Local scrambling is not subject to WCO*

a. [**us-kii$_{1/*2}$** behin-ne] [**har laṛke-ko**]$_2$ ḍããṭaa
s/he-GEN sister-ERG every boy-ACC scolded
'Her/his$_{1/*2}$ sister scolded every boy$_2$.'

b. [**har laṛke-ko**]$_1$ [**us-kii$_1$** behin-ne] ___$_1$ ḍããṭaa
every boy-ACC s/he-GEN sister-ERG scolded
'For every boy *x*, *x*'s sister scolded *x*.'

At first glance, it appears that scrambling is clearly subject to SCO. If the pronoun c-commands the launching site, binding is impossible, as (6) shows. This restriction holds regardless of whether the pronoun is a regular personal pronoun (*us-ne*) or a reflexive (*apne aap-ne*).

(6) *[**har laṛke-ko**]$_1$ **us-ne$_1$/apne aap-ne$_1$** ___$_1$ dekhaa
every boy-ACC s/he-ERG/self-ERG saw
Intended: 'Every boy$_1$, he$_1$ saw.'

But caution is in order in interpreting (6). In particular, binding in (6) is already ruled out for reasons independent of SCO. First, the pronoun *us-ne* is subject to Condition B, which is plausibly violated if *us-ne* is bound by *har laṛke-ko*. Second, the reflexive *apne aap* is subject-oriented. (6) involves binding of *apne aap* by a scrambled object, violating the subject orientation. As a result, then, (6) is correctly ruled out even if scrambling was not subject to SCO. Therefore, the contrast between (5) and (6) by itself does not establish that Hindi scrambling differs w.r.t. SCO and WCO.

2.2 Secondary crossover effects

It is possible to circumvent the problems that arise in the interpretation of simple SCO configurations such as (6) by investigating secondary crossover effects (Van Riemsdijk & Williams 1981, Safir 1984, Postal 1993). In such configurations, the quantifier that binds the pronoun is not the moving element itself, but embedded inside the moving element (the possessor in the examples that follow). As we now show, in such configurations a systematic contrast arises between WCO and SCO.

Like English, Hindi allows *inverse linking*, whereby the possessor of a DP binds a pronoun c-commanded by the container DP (see May 1977, Higginbotham 1980, Safir 1984, Ruys 2000, and May & Bale 2006 for general discussion of inverse linking). This is illustrated in (7).

(7) *Binding by possessor*

a. [**har laṛke-kii$_1$** behin-ne] **us-ko$_1$** ḍããṭaa
every boy-GEN sister-ERG he-ACC scolded
'For every boy *x*, *x*'s sister scolded *x*.'

b. [**har laṛke-kii$_1$** behin-ne] [**us-ke$_1$** dost-ko] ḍããṭaa
every boy-GEN sister-ERG he-GEN friend-ACC scolded
'For every boy *x*, *x*'s sister scolded *x*'s friend.'

Again as in English, possessors do not c-command out of their container DP. In (8), no Condition B effect obtains, which indicates that the possessor *Ram-kii* does not c-command the pronoun *us-ko*.

(8) [**Ram-kii$_1$** behin-ne] **us-ko$_1$** dekhaa
Ram-GEN sister-ERG s/he-ACC saw
'Ram's$_1$ sister saw him$_1$.'

Furthermore, the cases of binding by a possessor in (7) do not involve possessor raising of *har laṛke-kii* 'every boy-GEN'. While Hindi does allow possessor raising in some cases, DPs that bear ergative case (*-ne*) or accusative case (*-ko*) do not permit possessor raising out of them, as shown in (9) and (10), respectively (see Alok 2016 for related discussion).

(9) *No possessor extraction out of ergative DPs*

a. kal [Ram-kii behin-ne] Anu-ko ḍããṭaa
yesterday Ram-GEN sister-ERG Anu-ACC scolded
'Yesterday, Ram's sister scolded Anu.'

b. *Ram-kii$_1$ kal [___$_1$ behin-ne] Anu-ko ḍããṭaa
Ram-GEN yesterday sister-ERG Anu-ACC scolded

(10) *No possessor extraction out of accusative (i.e.,* ko*-marked) objects*

a. us-ne [Ram-kii behin-ko] ḍããṭaa
s/he-ERG Ram-GEN sister-ACC scolded
'S/he$_1$ scolded Ram's$_2$ sister.'

b. *Ram-kii$_1$ us-ne [___$_1$ behin-ko] ḍããṭaa
Ram-GEN s/he-ERG sister-ACC scolded

Against this background, we now turn to secondary crossover. The examples so far involved binding by a possessor in a base-generated configuration. Binding by a possessor may also be fed by scrambling, as (11) shows. Here, the possessor *har laṛke-kii* 'every boy-GEN' inside the moved DP *har laṛke-kii behin-ko* 'every boy's sister-ACC' binds the pronoun *us-ke* 'he-GEN' inside the subject *us-ke dost-ne* 'his friend-ERG'. Because the moved DP bears accusative case (*-ko*) and such DPs do not permit possessor raising out of them (see (10)), we can rule out the possibility of possessor raising having applied in (11). Thus, (11) demonstrates that Hindi scrambling does not give rise to secondary WCO, just as it does not give rise to standard WCO.

(11) *Binding by possessor inside scrambled DP → no secondary WCO*

[**har laṛke-kii$_1$** behin-ko]$_2$ [**us-ke$_1$** dost-ne] ___$_2$ ḍããṭaa
every boy-GEN sister-ACC he-GEN friend-ERG scolded
'For every boy *x*, *x*'s friend scolded *x*'s sister.'

A puzzle arises when we consider (12), which involves a minimally different configuration from (11). In (12), the bound pronoun *us-ne* 'he-ERG' is not embedded inside the subject, but it is itself the subject. In this case, the binding is ungrammatical. In other words, (12) shows that scrambling is subject to secondary SCO.

(12) *No binding by possessor if pronoun c-commands trace → secondary SCO*

*[**har** **laṛke-kii$_1$** behin-ko]$_2$ **us-ne$_1$** ___$_2$ ḍããṭaa

every boy-GEN sister-ACC he-ERG scolded

Intended: 'For every boy *x*, *x* scolded *x*'s sister.'

It is important to note that the various confounds that arose with examples of apparent simple SCO such as (6) do not arise with (12). In particular, Condition B is not violated in (12) because the pronoun is not bound by a c-commanding DP (this is seen most clearly in the non-movement counterpart in (8)).

The relevant structure of (12) is schematized in (13). The impossibility of binding in this configuration poses a clear puzzle. First, we saw on the basis of (5) and (11) that scrambling may feed pronominal binding (i.e., there are no WCO effects). Second, we know that possessors may bind outside their container DPs in the absence of movement (see (7)) and after movement (11). Third, the trace in (13) is not coindexed with the subject pronoun, so there is no transparent Condition C effect with respect to the trace.

(13) *[every boy's$_1$ sister]$_2$ … he$_1$ … t_2 …

It would seem, therefore, that all the requirements for binding are satisfied in (12)/(13), and yet binding is impossible. Particularly significant is the contrast between (11) and (12). Binding of a pronoun by a possessor inside a moved DP is possible if the pronoun does not c-command the launching site of the DP (11), but not if the pronoun c-commands the launching site (12). No analogous restriction holds in the absence of scrambling (7). This strongly suggests that the contrast between (11) and (12) involves the fact that these structures are the result of scrambling.

The key takeaway of the contrast between the secondary WCO configuration (11) and the secondary SCO configuration (12) is that the distribution of SCO does not match the distribution of WCO in Hindi scrambling: secondary SCO arises in configurations that do not display secondary

WCO. This finding provides clear empirical evidence that SCO is at least partially the result of a mechanism distinct from those that underlie WCO. An account that treats SCO and WCO in the same way (e.g., Van Riemsdijk & Williams 1981) does not give rise to this split.

Before we proceed, we note that the divergence of secondary SCO and secondary WCO in Hindi scrambling differs from both English A- and A′-movement, where the two correlate. As shown in (14) and (15), A′-movement displays both secondary WCO and secondary SCO (see Higginbotham 1980, Van Riemsdijk & Williams 1981, Safir 1984, 1999, Postal 1993), whereas A-movement displays neither.

(14) *English A′-movement: secondary SCO and WCO*

a. *[**Whose$_1$** mother]$_2$ do [**his$_1$** friends] admire ___$_2$?

b. *[**Whose$_1$** mother]$_2$ does **he$_1$** admire ___$_2$?

(15) *English A-movement: no secondary SCO or WCO*

a. [**Every boy's$_1$** mother]$_2$ seems to **him$_1$** ___$_2$ to be a genius.

b. [**Every boy's$_1$** mother]$_2$ seems to [**his$_1$** friends] ___$_2$ to be a genius.

In other words, then, Hindi scrambling behaves like English A-movement w.r.t. (secondary) WCO, but like English A′-movement w.r.t. (secondary) SCO, as summarized in (16).[2]

(16) *Summary: Distribution of crossover effects*

	English A-movement	Hindi scrambling	English A′-movement
WCO	N (4b)	N (5)	Y (4a)
secondary WCO	N (15b)	N (11)	Y (14b)
secondary SCO	N (15a)	Y (12)	Y (14a)

An analysis of the Hindi scrambling facts thus requires accounts of SCO and WCO that explain why they part ways in the way they do and what conditions their distribution. The Hindi facts also touch on important debates on the relationship between scrambling and the A/A′-distinction. It is well-known that scrambling displays a "mixed" behavior w.r.t. traditional A- and A′-properties, including issues of locality, parasitic-gap licensing, and weak crossover. How scrambling relates to A- vs. A′-

[2]Non-secondary SCO is omitted from (16) due to the difficulties in interpreting examples like (6), discussed above.

movement has been the subject of considerable debate, ranging from analyses that treat scrambling as A-movement or A′-movement (e.g., Saito 1985, 1989, Fanselow 1987, 1990, Mahajan 1990, 1994, Müller & Sternefeld 1993, 1994, Müller 1995) to analyses that treat it as a genuinely mixed type of movement (e.g., Webelhuth 1989, 1992, Dayal 1994, Browning & Karimi 1994). The distribution of properties in (16) adds a novel empirical dimension to this debate, and it deepens questions about the extent to which scrambling can be treated as pure A- or A′-movement and about the extent to which certain properties of scrambling may be derived from other properties of scrambling.

3. Binding and weak crossover

As mentioned in section 1, because our focus in this paper is SCO and its analytical treatment, we will have relatively little to say about the absence of WCO with scrambling. This absence demonstrates that it is in principle possible for a scrambled DP to bind a pronoun from its landing site. In this respect, the landing site of scrambling behaves like an A-position (Fanselow 1987, 1990, Mahajan 1990, 1994).[3] We will simply assume, therefore, that binding is possible only from A-positions (Reinhart 1983). This assumption may be implemented in a number of ways. One possibility is Büring's (2004) account, which assumes that pronominal binding requires a special operator ("β_n") to be adjoined below the landing site. By assumption, this operator can be adjoined only below A-positions (Büring

[3]In principle, if scrambling targets an A-position, we expect it to also be able to feed binding of anaphors. This expectation is borne out for reciprocal pronouns (see section 5.4), but judgments diverge for reflexive pronouns. For Mahajan (1990: 32–33, 1994: 307), local scrambling may feed binding of the reflexive pronoun *apnaa* (also see Kidwai 2000: 5), while Jones (1993: 80) and Dayal (1994: 242) report that such binding is impossible. The latter judgments is illustrated in (i):

(i) *Mohan-ko$_1$ [apne$_1$ baccõ-ne] ___$_1$ maaraa.
Mohan-ACC self's children-ERG beat
'Self's children bear Mohan.' (Dayal 1994: 242, ex. (8b))

(i) might be taken as evidence against our claim that scrambling targets an A-position. But there is a confounding factor, namely that for many speakers the reflexive pronoun *apnaa* is subject-oriented independently of scrambling. For these speakers, a reflexive direct object in a ditransitive construction may be bound only by the subject, not by the indirect object, as shown in (ii).

(ii) Ram-ne$_1$ Mohan-ko$_2$ [apnii$_{1/*2}$ kitaab] dii.
Ram-ERG Mohan-DAT self's book gave
'Ram$_1$ gave Mohan$_2$ self's$_{1/*2}$ book.' (Dayal 1994: 244, ex. (11a))

Not all speakers show the pattern in (ii); Mahajan (1990: 34) and Gurtu (1992: 24) permit binding by either the subject or the indirect object. Based on Dayal (1994: 247–249), it seems that the speakers who disallow binding in (i) are also the speakers that show subject orientation in (ii). This suggests that (i) is a red herring for the A/A′-nature of the landing site of scrambling. Even if scrambling targets an A-position—as we suggest—(i) is still ruled out due to the requirement that *apnaa* be bound by a subject, which it is not in (i). More generally, it then follows that object scrambling may never feed reflexive binding, irrespective of whether it targets an A- or an A′-position.

2004: 25). Another analytical option is to assume that local scrambling and long-distance scrambling differ in the type of variable they leave behind. Sauerland (1998, 2004) and Ruys (2000) propose that A′-movement is interpreted via λ-abstraction over choice functions whereas A-movement involves λ-abstraction over an individual-type variable. By assumptions, pronouns are universally of type *e* and so can only be bound by a λ-operator over variables of type *e*. This has the effect that a DP may bind a pronoun from an A-position, but not from an A′-position. Within this approach, local scrambling would then involve λ-abstraction over type-*e* variables (also see Van Urk 2015, and Keine & Poole 2022 for Hindi specifically). Third, following Van Riemsdijk & Williams (1981) and Williams (2003, 2013), one could analyze the asymmetry in terms of rule ordering. This line of account would assume that local scrambling targets a position lower in the clausal spine than long-distance scrambling (see Keine 2018, 2019, 2020 for evidence to this effect). Within the assumptions of Van Riemsdijk & Williams's (1981) and Williams's (2003, 2013) systems, this then entails that all instances of local scrambling apply before all instances of long-distance scrambling. If pronominal binding is determined *after* local scrambling has applied but *before* long-distance scrambling, it follows that pronominal binding may only be fed by the former.

All of these accounts of the absence of WCO with scrambling are compatible with the remainder of this paper, and we will therefore abstract away from the choice in what follows, focusing on SCO instead.

4. Case, Condition C, and strong crossover

We now turn to the analytical puzzle posed by the secondary SCO facts. The crucial contrast is repeated in (17).

(17) a. *Scrambling is subject to secondary SCO …* =(12)

*[**har** **laṛke-kii$_1$** behin-ko]$_2$ **us-ne$_1$** ___$_2$ ḍããṭaa

every boy-GEN sister-ACC he-ERG scolded

Intended: 'For every boy *x*, *x* scolded *x*'s sister.'

b. *… but not subject to secondary WCO* =(11)

[**har** **laṛke-kii$_1$** behin-ko]$_2$ [**us-ke$_1$** dost-ne] ___$_2$ ḍããṭaa

every boy-GEN sister-ACC he-GEN friend-ERG scolded

'For every boy *x*, *x*'s friend scolded *x*'s sister.'

Regardless of whether scrambling in (17) is taken to target an A- or an A′-position, the contrast does not follow. If scrambling targets an A′-position, binding is incorrectly ruled out in (17b); if scrambling targets an A-position, then all else equal binding is predicted to be possible in (17a). A second constraint is therefore required that is sensitive to whether the pronoun c-commands the launching site or not.

4.1 Condition C connectivity

We take as our analytical starting point the observation that the SCO facts correlate with the distribution of Condition C in Hindi. As in English, R-expressions are subject to Condition C in Hindi and hence must be globally A-free.

(18) *Condition C* (Chomsky 1981)
An R-expression must be globally A-free.

(19) A DP is globally A-free if it is not c-commanded by a coindexed DP that occurs in an A-position.

An R-expression in the possessor position of an object thus must not be coreferent with a pronoun in subject position (20a). Crucially, scrambling does not amnesty such Condition C violations, as shown in (20b). That is, coreference is still ruled out in (20b) despite the fact the R-expression is no longer c-commanded by the pronoun after scrambling. In other words, Hindi scrambling displays Condition C connectivity with possessors.

(20) *Scrambling does not amnesty Condition C violations*

a. * **us-ne$_1$** [**Sita-ke$_1$** bhaaii-ko] ḍããṭaa
she-ERG Sita-GEN brother-ACC scolded
Intended: 'She$_1$ scolded Sita's$_1$ brother.'

b. * [**Sita-ke$_1$** bhaaii-ko]$_2$ **us-ne$_1$** ___$_2$ ḍããṭaa
Sita-GEN brother-ACC she-ERG scolded
Intended: 'Sita's$_1$ brother, she$_1$ scolded.'

Because Condition C applies only under c-command, Condition C connectivity under scrambling arises only if the pronoun c-commands the launching site. As shown in (21), if the pronoun (*us-kii* 'she-GEN') is embedded inside another DP that is crossed by the scrambling, coreference is possible.

(21) *Control structure: no c-command*

[**Sita-ke$_1$** bhaaii-ko]$_2$ [**us-kii$_1$** sahelii-ne] ___$_2$ ḍããṭaa
Sita-GEN brother-ACC she-GEN female.friend-ERG scolded
'Sita's$_1$ brother, her$_1$ friend scolded.'

Assuming reconstruction, the contrast between (20b) and (21) is unsurprising given the standard c-command-based formulation of Condition C. It is worth noting, however, that this contrast correlates with the contrast between secondary WCO and secondary SCO that we saw earlier. Secondary SCO configurations are analogous to configurations that result in a Condition C effect under scrambling (schematized in (22))—a secondary SCO effect corresponds to "DP-GEN" being a quantificational DP in (22); a Condition C effect corresponds to "DP-GEN" being an R-expression. Conversely, configurations in which the pronoun is embedded inside another DP result in neither a weak crossover effect nor a Condition C effect (see (23)).

(22) *Secondary SCO (17a) + Condition C connectivity (20b)*

* [$_{DP}$ DP-GEN$_1$ ...]$_2$ ... pron-ERG$_1$ ... t_2 ...

(23) *Absence of secondary WCO (17b) + Condition C connectivity (21)*

[$_{DP}$ DP-GEN$_1$ ...]$_2$ ... [$_{DP}$ pron-GEN$_1$ ...] ... t_2 ...

Because the distribution of SCO thus corresponds to that of Condition C connectivity, the Hindi

data provide clear empirical evidence not just that SCO can be the result of a constraint unrelated to WCO, but more specifically that SCO is best analyzed as a Condition C effect.

Despite the clear empirical connection between SCO and Condition C, Chomsky's (1981) traditional account of SCO in terms of Condition C is insufficient. On this account, the trace of A′-movement behaves like an R-expression and is subject to Condition C. As it stands, this account does not extend to cases of *secondary* SCO because the SCO effect arises not w.r.t. the moving element itself, but instead w.r.t. the possessor of the moving element. Thus, in (22), the trace t_2 does not violate Condition C because it is not coindexed with the pronoun. Therefore, to obtain a Condition C violation in (22), the trace must have additional internal structure, comprising at least the presence of the possessor DP and the information that it is coindexed with the pronoun.

In the sections that follow, we first develop an account of Condition C connectivity under scrambling that extends to such cases, and then we show how such an account immediately derives the distribution of SCO vs. WCO in Hindi.

4.2 Case, Late Merge, and Condition C

To overcome the lack of internal structure in the launching site on a trace-based account, it is standard to appeal to the copy theory of movement (Chomsky 1995).[4] The key advantage of conceiving of movement as creating copies is that the internal structure of the moving expression is represented in the launching site. This allows for an account of Condition C connectivity that arises w.r.t. elements contained within the moved expression, as shown in (24), where ⟨[DP-GEN$_1$ …]⟩ represents the unpronounced lower copy.[5]

(24) *Condition C connectivity (20b) with copy theory*

*[DP-GEN$_1$ …] … pron-ERG$_1$ … ⟨[DP-GEN$_1$ …]⟩ …

While a copy-theoretic account is therefore promising, the simplest copy-theoretic account—according to which all movement creates a complete copy of the moved expression in the launching site—is too strong. In particular, movement types seem to differ in their propensity to incur Con-

[4]This line of analysis has been recognized as early as Van Riemsdijk & Williams (1981), who consider an account of secondary crossover in terms of "layered traces," though they ultimately reject such an account.

[5]A viable alternative to a copy-theoretic account is an approach in which Condition C evaluates every step of the derivation, not just the final representation. We will not pursue such an approach here, but as far as we can see, the analysis can be translated into it without any changes.

dition C connectivity in complex ways. In English, A′-movement shows a greater degree of Condition C connectivity than does A-movement (Chomsky 1993, Sauerland 1998, Fox 1999, Takahashi 2006, Lebeaux 2009, Takahashi & Hulsey 2009, Safir 2019, Thoms & Heycock 2022). For example, R-expressions inside argument clauses show Condition C connectivity with A′-movement but not with A-movement, as illustrated in (25) and (26).

(25) *(Absence of) Condition C connectivity with argument clauses*

a. *A′-movement*

??/*[Which argument that **John$_1$** is a genius]$_2$ did **he$_1$** believe ___$_2$?

b. *A-movement*

[Every argument that **John$_1$** is a genius]$_2$ seems to **him$_1$** ___$_2$ to be flawless.

(Fox 1999: 192, ex. (93a), (94))

(26) *(Absence of) Condition C connectivity with argument PPs*

a. *A′-movement*

*[Which picture of **John$_1$**]$_2$ did **he$_1$** buy ___$_2$?

b. *A-movement*

[Those pictures of **John$_1$**]$_2$ seems to **him$_1$** ___$_2$ to have been doctored.

(Thoms & Heycock 2022: 159, ex. (2), (4))

A common intuition that the literature on this contrast has pursued is that A-movement leaves an impoverished representation of the moved expressions in the launching site whereas A′-movement leaves behind a more complete representation of the moving expression (Sauerland 1998, Fox 1999, Bhatt & Pancheva 2004, Takahashi 2006, Takahashi & Hulsey 2009, Stanton 2016, Safir 2019, Thoms 2019, Thoms & Heycock 2022).

In what follows, we adopt Thoms's (2019) and Thoms & Heycock's (2022) *External-Remerge* account of the contrast in (25)/(26). Thoms (2019) and Thoms & Heycock (2022) propose that English A-movement allows the launching site to contain only an NP, with the DP portion merged later, before the moved element is merged in its landing site (this idea, though implemented very differently, goes back to Sportiche 2005). More specifically, following Citko (2005), De Vries (2009), Johnson (2011, 2012), Poole (2017), Citko & Gračanin-Yuksek (2021), and others, this model assumes

that constituents can be *externally remerged*, yielding a multidominant structure with two root notes. The two root nodes are then be merged with each other, yielding a single root node. Unlike other conceptions of Late Merge (like Lebeaux's 1988, 2000 *Adjoin-α* or Takahashi & Hulsey's 2009 *Wholesale Late Merger*), External Remerge is not countercyclic in the sense that at least one of the two elements being merged is always a root node. As such, it obeys De Vries's (2009) Root Condition on Merge (27).

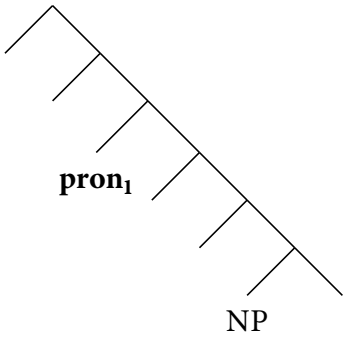
(27) *Root Condition* (De Vries 2009: 357)

If α and β are selected as input for Merge, then α or β (or both) must be a root.

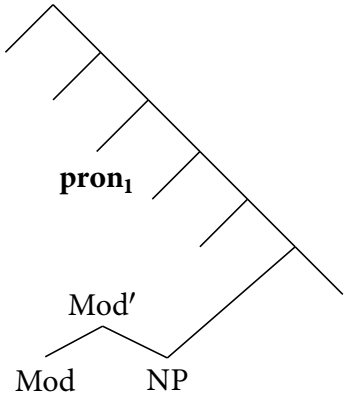
Thoms & Heycock (2022) account for the absence of Condition C connectivity for arguments with English A-movement (see (25b)/(26b)) by means of the derivation in (28). First, they assume, following Borer (2005), Moulton (2009), Lohndal (2012), Adger (2013), and Alexiadou (2014), that arguments of nouns are specifiers of a ModP projection between NP and DP. Second, A-movement permits a derivation in which only an NP is merged in the pre-movement position. Third, nominal material above NP may be externally merged on top of the NP, and the resulting constituent merged into a higher position. The resulting derivation for Condition C obviation under A-movement is shown in (28). First, only the NP is merged in the pre-movement position, lacking all adjuncts and arguments (28a). Second, the NP node is remerged with Mod, creating a structure in which the NP node has two mothers, and the structure as a whole has two root nodes (28b). Note that this step complies with (27) because the Mod head is a root node. In the third step, Mod introduces nominal arguments in its specifiers (linearized to the right in (28)), and the DP layer is merged above ModP (28c). Lastly, the resulting DP is merged into the landing site of A-movement, creating a single-root structure again (28d).

(28) *External-remerge account of English A-movement (Thoms & Heycock 2022)*
→ no Condition C connectivity

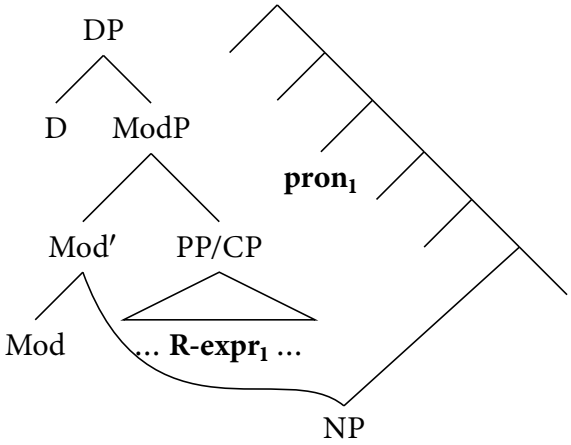
a. *Step 1: Merge of just NP*



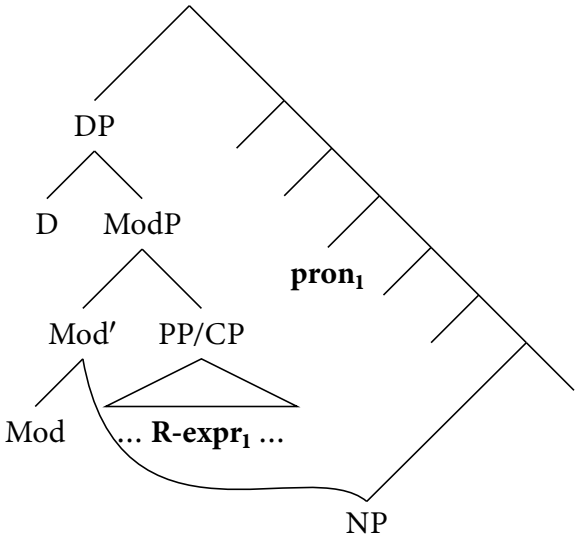
b. *Step 2: External Remerge of NP*



c. *Step 3: Introduction of arguments and creation of DP*



d. *Step 4: DP merged in landing site*

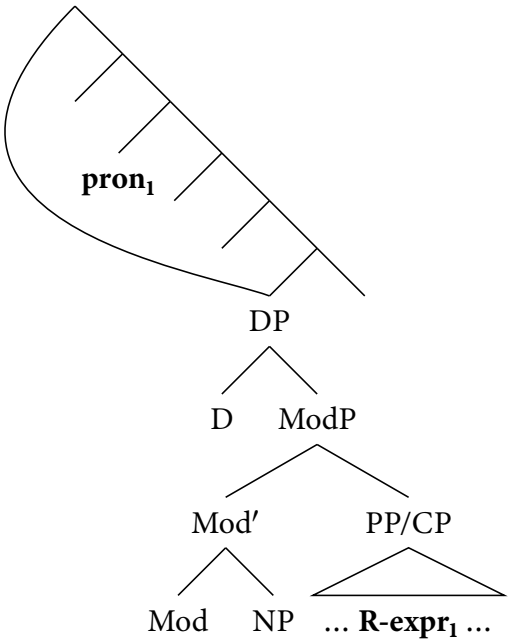


The crucial feature of the structure in (28d) is that the R-expression inside the PP is part of the externally-remerged material. As such, it is represented in the landing site of the A-movement step but not in the launching site, and it is correspondingly not c-commanded by the coindexed pronoun. Condition C is therefore respected in (28).

As with all multidominance theories of movement, questions arise as to how to determine which position an element is linearized in. Because all the movements we consider in this paper are overt, it suffices to say that it is the highest occurrence of the multidominated element that is pronounced. See Johnson (2012) and Poole (2017: 135–138) for a linearization algorithm for multidominance structures. Since the question is not different in nature from analogous issues that arise under the copy theory of movement (see, e.g., Nunes 1995, 2004), we will not consider these questions further here.

If left unconstrained, External Remerge would permit Condition C obviation across the board. But as we saw, A′-movement shows Condition C connectivity in these cases ((25a), (26a)). This means that an External-Remerge derivation as in (28) must be unavailable for A′-movement and that A′-movement must require the full DP structure to be present in the pre-movement position, as in (29).

(29) *English A′-movement and arguments (Thoms & Heycock 2022)*
→ Condition C connectivity



Why is External Remerge of this kind available for English A-movement, but not for English A′-movement? Building on Takahashi (2006) and Takahashi & Hulsey (2009), Thoms & Heycock (2022) propose that this follows from considerations of case (also see Gong 2022a,b). In particular, they assume that DP is subject to the Case Filter. This entails that the DP layer must be added *before* case is assigned, as stated in (30).

(30) *DP Case Filter* (Thoms & Heycock 2022)

DP is subject to the Case Filter. DP Late Merge is thus possible only before case is assigned.

In English, A-movement feeds case assignment. It is therefore possible to late merge a DP layer in an A-movement step, as long as case is assigned to the landing site of this A-movement step. By contrast, A′-movement applies to DPs that have already been assigned case. It is therefore not possible to Late Merge a DP layer to the landing site of an A′-movement step as this DP layer would remain without case, violating the DPs Case Filter (also see Takahashi & Hulsey 2009 and Thoms & Heycock 2022 for arguments that when case is not an issue, A′-movement as well may utilize Late Merge). It is also not possible to merge the DP layer early and to late merge the ModP layer after A′-movement has applied. This derivation would require sandwiching the ModP between the NP and the DP and

as such would involve a Merge step that does not apply to a root node, in violation of the Root Condition (27).

Because Late Merge of the DP layer is thus the only way of obviating Condition C with arguments and the DP layer is subject to the Case Filter (30), Thoms & Heycock's (2022) account derives the contrast between English A- and A′-movement in their ability to obviate Condition C violations (as does Takahashi & Hulsey's 2009 account, albeit in a somewhat different way). The account of Hindi in the next section will extend this analysis to scrambling.

Finally, as it stands, Thoms & Heycock's (2022) account seems to require a complete representation of the moved expression in the launching site of A′-movement, which would be too strong. It is standardly recognized since Freidin (1986) and Lebeaux (1988, 2000) (building on Van Riemsdijk & Williams 1981) that English A′-movement does not induce Condition C connectivity w.r.t. R-expressions inside adjuncts. Thus, we observe Condition C connectivity with argument clauses, as in (31a), but not with relative clauses, as in (31b).

(31) a. *[Which report that **John$_1$** was incompetent]$_2$ did **he$_1$** submit ___$_2$?

b. [Which report that **John$_1$** revised]$_2$ did **he$_1$** submit ___$_2$?

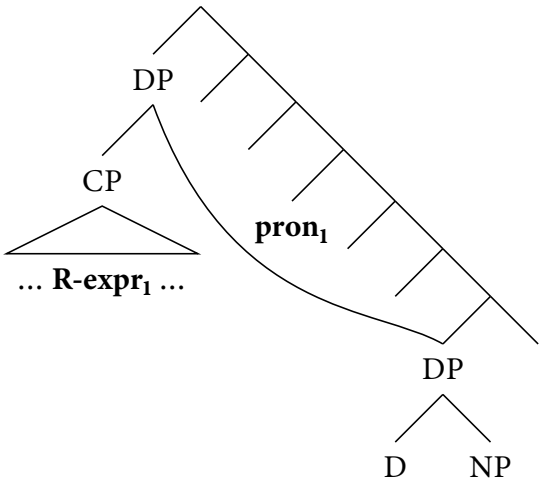
(Freidin 1986: 179, ex. (76))

The traditional account of such effects is due to Lebeaux (1988, 2000), and involves Late Merge of adjuncts. Lebeaux's core proposal is that adjuncts are not required to be present in a moving constituent before the movement applies (though they are permitted to). That is, adjunction may apply freely, either before or after movement takes place and it does not have to apply to the root node. It is thus possible to add a relative clause to a moved constituent *after* the movement has taken place, but arguments must be present *before* movement takes place. Applied to (31b), the relative clause can be merged after A′-movement, in which case *John* is not c-commanded by *he* and Condition C is obeyed. (31a) follows because argument clauses must be present in the launching site, creating a Condition C violation. Lebeaux derives this difference between adjuncts and arguments from the θ-criterion; Fox (1999) suggests a type-theoretic account.

In Thoms's (2019) and Thoms & Heycock's (2022) system, the late addition of adjuncts cannot be dependent on External Remerge of DP because A′-movement does not have access to a derivation

that late-merges the DP. Thoms & Heycock (2022) do not integrate adjuncts into their system, but there are a few options. One is to maintain Lebeaux's (1988, 2000) account: adjuncts can be counter-cyclically added to the moved constituent; that is, adjunction is not subject to the Root Condition (27).[6] Alternatively, one could assume that adjuncts are added to the DP shell. This permits External Remerge of a DP with a relative clause, thus obviating Condition C effects w.r.t. R-expressions within this relative clause. This is shown in (32), with linear order not represented.

(32) *External Remerge of relative clause with English A′-movement*
→ no Condition C connectivity



Note that this analysis requires that relative clauses can attach after merging D—that is, D and the NP may form a constituent that excludes the relative clause. Structure of this kind are also adopted by Hunter (2015) and Safir (2019); a semantics for them is proposed by Bach & Cooper (1978). For the sake of concreteness, we will assume in what follows that Condition C obviation with adjuncts in English A′-movement is the result of the derivation in (32), though nothing crucial hinges on this.

5. Application to Hindi scrambling

In this section, we extend Thoms's (2019) and Thoms & Heycock's (2022) account to Hindi scrambling and show that it offers a principled explanation of the puzzle observed in section 2. We do so by analyzing SCO as a Condition C effect, induced by the unavailability of an External-Remerge derivation for Hindi scrambling. Crucial to this account is the fact that Thoms & Heycock's (2022)

[6]Exempting adjunction from the Root Condition is most natural on accounts that attribute adjunction to a special operation (e.g., *Adjoin-α* in Lebeaux 1988, 2000 or *pair Merge* in Chomsky 2004).

account, following Takahashi (2006) and Takahashi & Hulsey (2009), does not tie the availability of External Remerge to the A/A′-distinction itself, but to case.

5.1 Condition C connectivity

Recall from section 4.1 that scrambling induces Condition C connectivity with possessors, as demonstrated again in (33), repeated from (20b).

(33) *[**Sita-ke$_1$** bhaaii-ko]$_2$ **us-ne$_1$** ___$_2$ ḍããṭaa
Sita-GEN brother-ACC she-ERG scolded
Intended: 'Sita's$_1$ brother, she$_1$ scolded.'

While Thoms & Heycock (2022) do not discuss the status of possessors in their systems, their analysis extends to (33) rather straightforwardly if (i) Hindi scrambling does not allow Late Merge of the DP layer, and (ii) possessors are introduced below the DP layer.

As for (i), recall that on Thoms & Heycock's (2022) account, DP Late Merge is possible only if the movement feeds case assignment. It is a general fact about scrambling (in Hindi and other languages) that scrambling does not affect a DP's case. In other words, the case a scrambled DP bears is always the same as the case it would bear had scrambling not taken place. This is illustrated in (34) and (35). (34) shows that the object *Ram* must bear accusative case *-ko*, regardless of whether scrambling takes place. (35) makes an analogous observation for the object of the verb *milaa* 'meet', which bears instrumental case.

(34) *Case connectivity: Accusative*

a. Sita-ne Ram-{ko/*se/*kaa/*Ø} dekhaa
Sita-ERG Ram-{ACC/*INSTR/*GEN/*Ø} saw
'Sita saw Ram.'

b. Ram-{ko/*se/*kaa/*Ø}$_1$ Sita-ne ___$_1$ dekhaa
Ram-{ACC/*INSTR/*GEN/*Ø} Sita-ERG saw
'Sita saw Ram.'

(35) *Case connectivity: Instrumental*

a. Pratap Sita-{se/*ko/*kaa/*Ø} milaa hai
Pratap Sita-{INSTR/*ACC/*GEN/*Ø} met AUX
'Pratap has met Sita.'

b. Sita-{se/*ko/*kaa/*Ø}$_1$ Pratap ___$_1$ milaa hai
Sita-{INSTR/*ACC/*GEN/*Ø} Pratap met AUX
'Pratap has met Sita.'

Such case connectivity provides clear evidence that a DP's case feature is determined *before* scrambling takes place; equivalently, that scrambling takes place *after* case is assigned. In conjunction with the DP Case Filter in (30), this entails that scrambling requires the DP layer to be present before scrambling applies, as the DP layer would otherwise remain caseless.

As for (ii)—the position of the possessor DP—, we assume that possessors are introduced in a DP-internal PossP projection (see, e.g., Szabolcsi 1983 and Kayne 1993 for arguments that possessors originate below D). Because the DP layer dominates the PossP layer, the Root Condition (27) requires that the PossP layer must be merged *before* the DP layer. Given that the DP layer must be present before scrambling applies (as just established), it follows that the PossP layer must be as well. The morphology of the genitive case marker is consistent with possessors being introduced below the locus of case. The genitive marker agrees in number and gender with the container DP's head noun, and importantly it appears in an oblique form if the container DP is overtly case-marked. In (36), if the container DP bears unmarked case, the genitive case marker takes the form *-kaa* (for a masculine singular head noun), as in (36a). By contrast, if the container DP bears a case marker, the genitive marker of a possessor takes the oblique form *-ke* (36b).

(36) a. [Sita-**kaa** beṭaa] giraa
Sita-GEN.MASC.SG.NOM son fell
'Sita's son fell.'

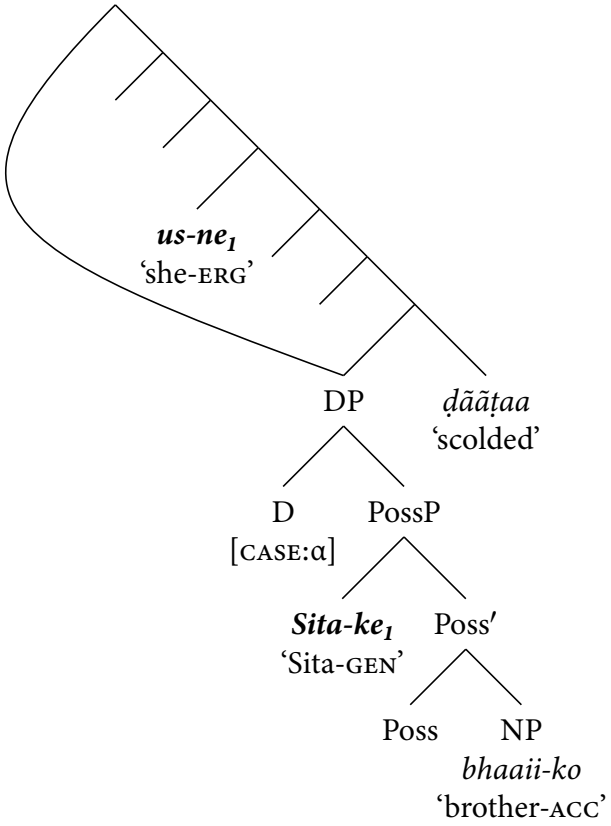
b. Anu-ne [Sita-**ke** beṭe-**ko**] dekhaa
Anu-ERG Sita-GEN.MASC.SG.OBL son-ACC saw
'Anu saw Sita's son.'

While the precise mechanism that underlies this case concord deserves further study, we interpret the facts in (36) as indicating that the possessor DP appears below the D head that contains the case information of the container DP, as in (37). The oblique form if the genitive marker then appears if it occurs in the domain of a D with certain case features.

(37) $[_{DP}\ D_{[CASE:\alpha]}\ [_{PossP}\ DP\text{-}GEN\ Poss\ NP\ ]]$

In conjunction with these assumptions about scrambling and the location of the possessor DP, Thoms & Heycock's (2022) account derives that scrambling does not obviation Condition C violations with possessors (33). As we now show, both Early Merge and Late Merge of the possessor is ungrammatical in this case. The Early-Merge structure is shown in (38). Here, the DP layer and the possessor DP *Sita-ke* 'Sita-GEN' are merged in the base position. *Sita-ke* is thus c-commanded by the pronoun, violating Condition C.

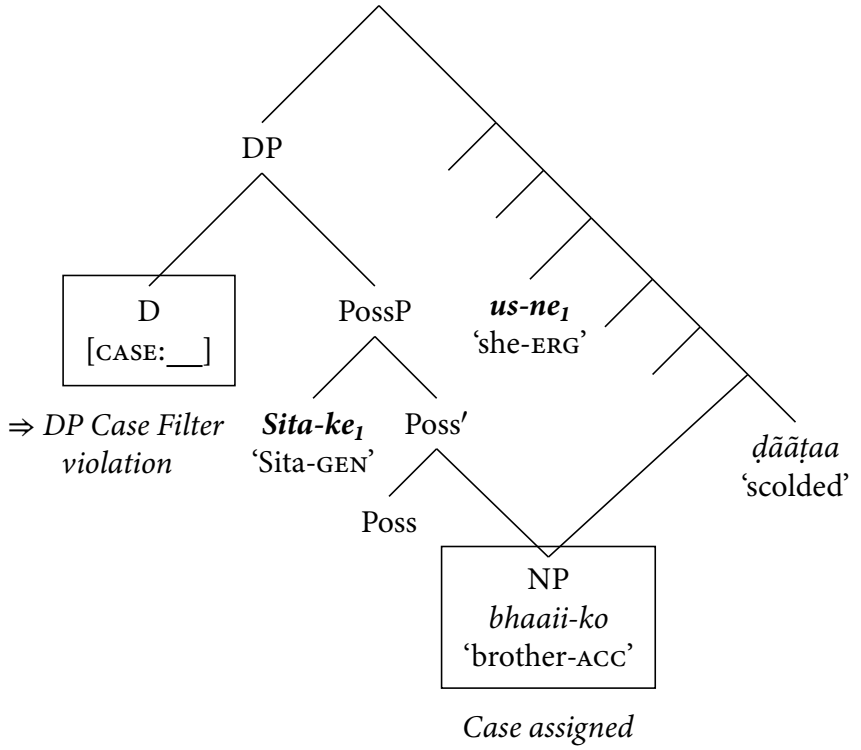
(38) *Derivation of (33) without DP Late Merge → Condition C connectivity*



The corresponding Late-Merge derivation is given in (39). This derivation involves merging only the NP in the base position, with External Remerge of PossP and DP. In this structure, Condition C

is obeyed, but the DP Case Filter (30) is violated, as the late-merged D does not receive a case feature in the landing site of scrambling. (39) is therefore ungrammatical as well.

(39) *Derivation of (33) with Late Merge of PossP and DP → Case Filter violation*



Of course, merging only the DP layer late (with PossP present in the base position) will not converge either as it would produce a violation of both Condition C and the Case Filter.

Thoms & Heycock's (2022) External-Remerge account of Condition C connectivity with arguments can thus be extended to possessors and scrambling. It derives that scrambling does not obviate Condition C effects with possessors from the independently-motivated fact that scrambling does not feed case assignment. Thus, scrambling patterns like English A′-movement w.r.t. Condition C connectivity precisely because it shares with English A′-movement its relationship to case: the moving element receives case before the movement applies, prohibiting External Remerge of DP and PossP.

5.2 Strong crossover

We now turn to the (secondary) SCO facts in section 2.2 that posed the initial puzzle. The crucial contrast in need of explanation is repeated in (40) and (41). Scrambling gives rise to a secondary

SCO effect (40), but not to a secondary WCO effect (41). That is, binding of the pronoun is possible only if the pronoun does not c-command the launching site of scrambling.

(40) *Scrambling is subject to secondary SCO …*

*[**har laṛke-kii$_1$** behin-ko]$_2$ **us-ne$_1$** ___$_2$ ḍããṭaa
every boy-GEN sister-ACC he-ERG scolded
Intended: 'For every boy x, x scolded x's sister.'

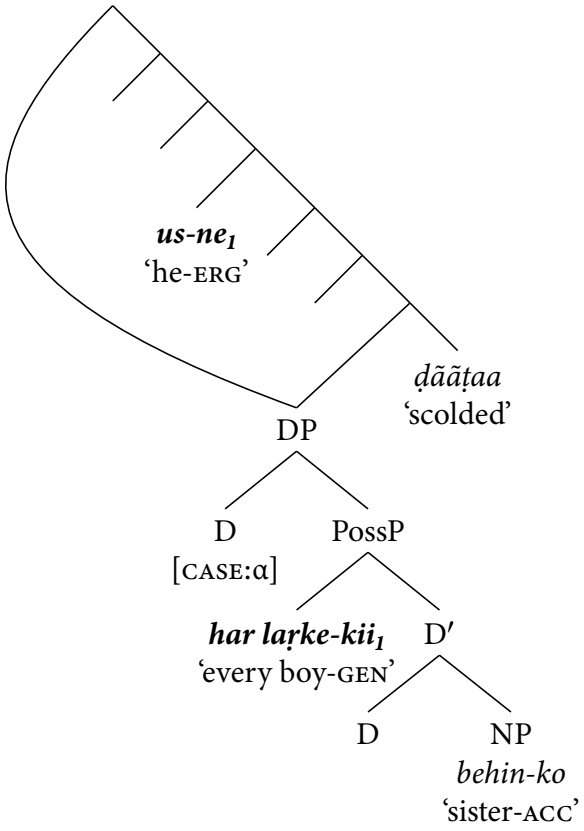
(41) *… but not subject to secondary WCO*

[**har laṛke-kii$_1$** behin-ko]$_2$ [**us-ke$_1$** dost-ne] ___$_2$ ḍããṭaa
every boy-GEN sister-ACC he-GEN friend-ERG scolded
'For every boy x, x's friend scolded x's sister.'

As noted in section 4.1, the grammaticality contrast in (40)–(41) is clearly analogous to Condition C connectivity, which likewise arises only if a coindexed pronoun c-commands the launching site. We therefore analyze (40) as a Condition C effect. To establish the connection between SCO and Condition C, we assume that quantified DPs are R-expressions for the purposes of binding theory (e.g., Chomsky 1981: 115–116) and hence subject to Condition C. The structure of (40) is then analogous to that of (33) and given in (42). Because *har laṛke-kii* 'every boy-GEN' is subject to Condition C, (42) violates Condition C. As in (39), an alternative derivation in which the DP layer and the possessor DP are late-merged (not shown here) violates the DP Case Filter (30).[7]

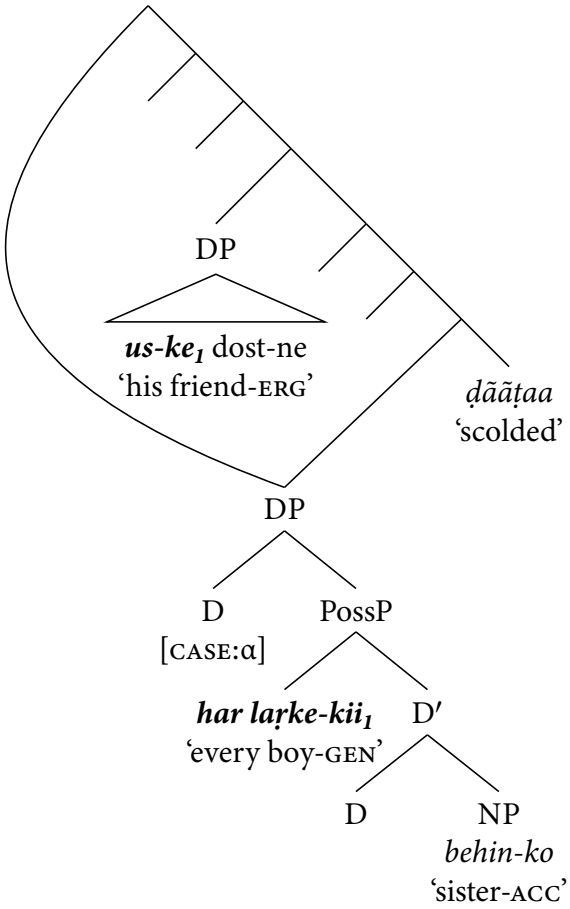
[7] If inverse linking is handled via QR of the possessor, than it is conceivable that the quantificational possessor *har laṛke-kii* 'every boy-GEN' undergoes QR to a position outside of the container DP in (42) (a movement that, as we saw, would be ungrammatical if it is overt). Given that QR does not feed case assignment, such a movement step would not have access to a DP Late Merge derivation. It would therefore not affect the Condition C facts, ruling out (42) even with QR.

(42) *Scrambling in (40) without DP Late Merge → Condition C violation*



By contrast, if the pronoun is embedded inside the subject DP and hence does not c-command the lower occurrence of *har laṛke-kii* 'every boy-GEN', as in (41), Condition C is not violated (43).

(43) *Structure of (41) → no Condition C violation*



The crucial difference between SCO and WCO is therefore accounted for not by appealing to whether or not binding from the landing site is possible (it is in both cases), but by invoking the structural relationship between the pronoun and the representation of the moved element in the launching site. This account hence not only derives this difference between SCO and WCO in Hindi scrambling, it also explains why SCO travels with Condition C connectivity across movement types.

5.3 Late Merge of adjuncts

The analysis we propose here attributes to Hindi scrambling the same Late-Merge options as to English A′-movement, derived from the fact that both do not feed case assignment. Given that Late Merge of adjuncts is possible for English A′-movement (section 4.2), we expect that scrambling patterns the same way. This expectation is borne out. Like English A′-movement, scrambling obviates Condition C violations with relative clause, as (44) shows.

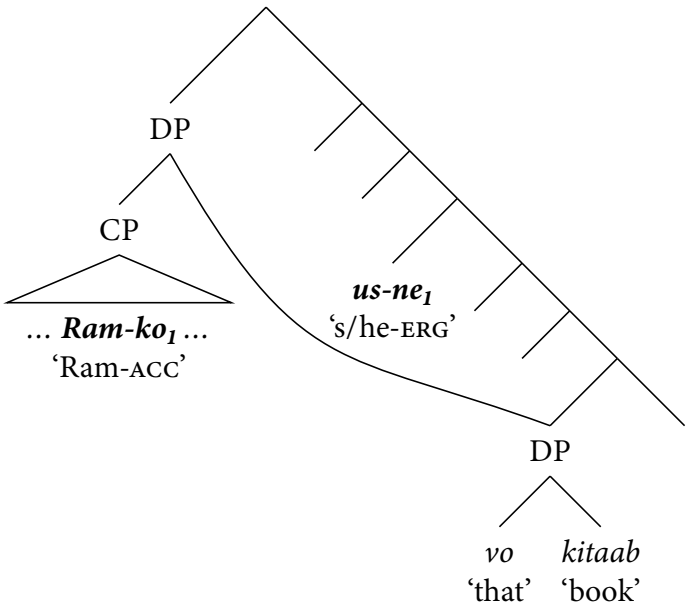
(44) *No Condition C connectivity with relative clauses*

a. ***us-ne$_1$** kal [$_{DP}$ vo kitaab [$_{CP}$ jo **Ram-ko$_1$** pasand thii]] bec dii
s/he-ERG yesterday that book REL Ram-DAT like AUX sell give
Intended: 'He$_1$ sold the book that Ram$_1$ liked yesterday.'

b. [$_{DP}$ vo kitaab [$_{CP}$ jo **Ram-ko$_1$** pasand thii]]$_2$ **us-ne$_1$** kal ___$_2$ bec dii
that book REL Ram-DAT like AUX s/he-ERG yesterday sell give
'The book that Ram$_1$ liked, he$_1$ sold yesterday.'

The account of (44) is analogous to the treatment of English relative clauses in (32): the relative clause can late-merge onto the DP, resulting in (45). This structure obeys both the Case Filter and Condition C. As before, for typographic reasons (45) does not represent the linear order.

(45) *External Remerge of relative clause in (44) → no Condition C connectivity*



There is some Hindi-internal evidence that relative clauses attach very high, in particular higher than the locus of case. If a DP bears a case marker and a relative clause, the relative clause must follow the case marker (46a) rather than the other way around (46b).

(46) a. Sita-ne kal [$_{DP}$ kitaab-**ko** [$_{CP}$ jo Ram-ko pasand thii]] bec diyaa
Sita-ERG yesterday book-ACC REL Ram-DAT like AUX sell give
'Sita sold the book that Ram liked yesterday.'

b. *Sita-ne kal [$_{DP}$ kitaab [$_{CP}$ jo Ram-ko pasand thii]]-**ko** bec diyaa
Sita-ERG yesterday book REL Ram-DAT like AUX -ACC sell give
Intended: 'Sita sold the book that Ram liked yesterday.'

It is possible, of course, that the linear position of the case marker in (46) does not reflect its syntactic position. But to the extent that it does, the ordering in (46a) indicates that relative clauses are merged above the position of the case marker (D, on our account). It is this high attachment site that enables the external-remerge derivation in (45).

5.4 Extension to reciprocal binding

The account proposed here also allows us to make sense of another asymmetry, which arises with reciprocal pronouns and scrambling. As (47) shows, the reciprocal pronoun *ek duusre* can appear either directly as an argument of the verb or as a possessor. In both cases, it must be bound by a c-commanding antecedent (i.e., the subject in (47)).

(47) *Reciprocal binding*

a. [**Rina aur Mina**]-**ne$_1$** [**ek duusre-ke$_1$** dostõ-ko] ḍããṭaa
Rina and Mina -ERG each other-GEN friends-ACC scolded
'Rina and Mina$_1$ scolded each other's$_1$ friends.'

b. [**Rina aur Mina**]-**ne$_1$** **ek duusre-ko$_1$** ḍããṭaa
Rina and Mina -ERG each other-ACC scolded
'Rina and Mina$_1$ scolded each other$_1$.'

Scrambling may feed binding of a reciprocal pronoun inside the subject (Jones 1993: 80, Bhatt & Dayal 2007: 289, Bhatt 2016: 515, Keine 2018: 6), but not if the reciprocal pronoun is itself the subject (Kidwai 2000: 5, Bhatt 2016: 515, fn. 4). That is, we observe contrasts like (48). In (48a), the reciprocal pronoun is the possessor of the subject DP *ek duusre-kii maaõ-ne* 'each other's mothers-ERG'. The object is scrambled over this subject, which enables binding of the reciprocal by the object (the

sentence is ungrammatical without scrambling). By contrast, in (48b), the reciprocal is itself the subject. Here, scrambling of the object does not enable binding of the reciprocal, and the sentence is hence ungrammatical (as it is if no scrambling takes place).

(48) *Reciprocal binding and scrambling*

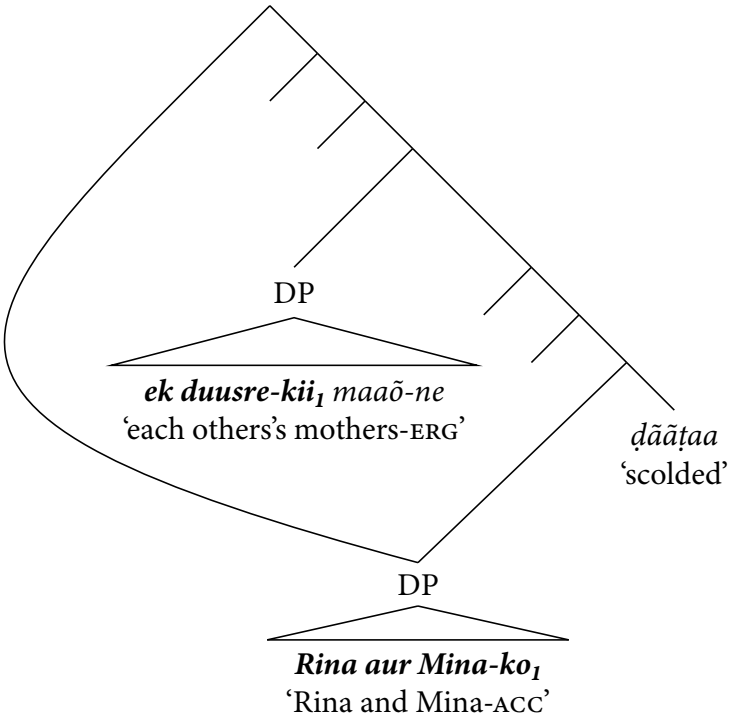
a. [**Rina aur Mina**]-**ko$_1$** [**ek duusre-kii$_1$** maaõ-ne] ___$_1$ ḍããṭaa
Rina and Mina -ACC each other-GEN mothers-ERG scolded
'Rina and Mina$_1$, each other's$_1$ mothers scolded (them).'

b. *[**Rina aur Mina**]-**ko$_1$** **ek duusre-ne$_1$** ___$_1$ ḍããṭaa
Rina and Mina -ACC each other-ERG scolded
Intended: 'Rina and Mina$_1$, each other$_1$ scolded (them).'

Conflicting conclusions have been drawn from the data points in (48). On the one hand, Bhatt & Dayal (2007) and Bhatt (2016) conclude from (48a) that scrambling lands in an A-position, which enables binding. On the other hand, Kidwai (2000) concludes from (48b) that scrambling does *not* land in an A-position as otherwise binding should be possible.

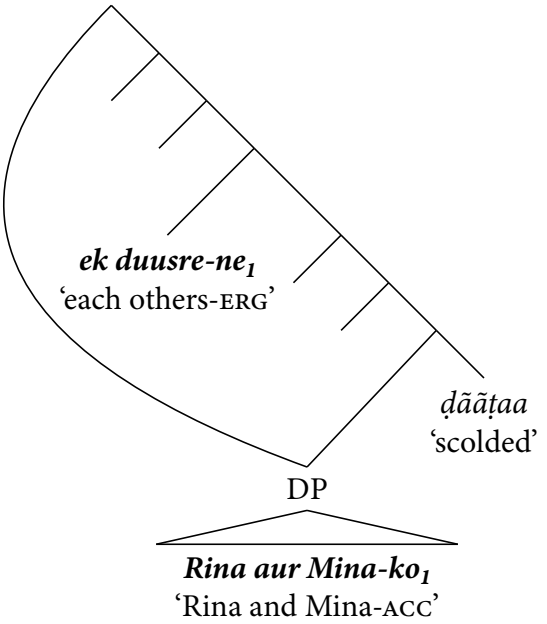
It seems clear, then, that focusing exclusively on the properties of the landing site of scrambling will not provide an account of (48), simply because the landing site is the same in (48a,b). We propose instead that the contrast in (48) follows from the properties of the launching site, as a Condition C effect. The structure for the grammatical baseline case (48a) is given in (49). Because, by assumption, scrambling targets an A-position, the scrambled object may bind the reciprocal pronoun inside the subject (Bhatt & Dayal 2007, Bhatt 2016, Keine 2018).

(49) *Structure of (48a) → no Condition C violation*



The structure for the ungrammatical (48b) is provided in (50). Here, the reciprocal pronoun c-commands the launching site, inducing a Condition C effect.

(50) *Scrambling in (48b) → Condition C violation*



Our analysis of SCO in Hindi thus extends to the reciprocal contrast in (48). The resulting account

thus offers a unified explanation of the empirical patterns of (i) SCO, (ii) Condition C connectivity, and (iii) binding of reciprocal pronouns.

5.5 Scrambling of pronouns

Chomsky's (1981) traditional account of SCO postulates that movement that is subject to SCO leaves behind a kind of trace that is subject to Condition C (a so-called "variable"). While the account proposed here likewise attributes SCO to Condition C, it fundamentally differs from Chomsky's (1981) in that we do not assume that such movement leaves behind a special silent element. Instead, Condition C connectivity arises w.r.t. the lower occurrence of the moved element. In addition to conceptual advantages (in particular adherence to the Inclusiveness Condition, see Chomsky 1995), we also saw an empirical argument against a trace-based account: a copy-theoretic or multidominance-based account derives secondary SCO because the occurrence in the launching site contains information about the internal structure of the moved expression while a trace would not (see section 4.2).

In this section, we briefly investigate another distinctive prediction of the account proposed here. The prediction arises for cases in which what is scrambled is a pronoun.[8] On a trace-based approach, the movement should still leave behind a variable and hence display Condition C effects w.r.t. to higher pronouns. By contrast, the account developed here predicts that scrambling of a pronoun does *not* give rise to a Condition C effect because the occurrence in the launching site remains a pronoun, and is hence not subject to Condition C. In other words, the nature of the scrambled expression should affect whether Condition C obtains or not. As (51) shows, this prediction is borne out. The baseline structure in (51a) shows that in this construction the matrix subject may corefer with an pronoun inside the nonfinite clause, but not with an R-expression—a standard Condition C effect. Scrambling of the object does not alter the coreference options (51b,c).

[8]We thank David Pesetsky for making us aware of this prediction and for helpful discussion.

(51) a. *Us-ne*$_1$ Mina-ko **use$_1$/*Ram-ko$_1$** ḍããṭ-ne diyaa
he-ERG Mina-DAT he.ACC/*Ram-ACC scold-INF let
'He$_1$ let Mina scold him$_1$/*Ram$_1$.'

b. **Use$_1$** *us-ne*$_1$ Mina-ko ___$_1$ ḍããṭ-ne diyaa
he.ACC he-ERG Mina-DAT scold-INF let
'Him$_1$, he$_1$ let Mina scold.'

c. *__Ram-ko$_1$__ *us-ne*$_1$ Mina-ko ___$_1$ ḍããṭ-ne diyaa
Ram-ACC he-ERG Mina-DAT scold-INF let
'Ram$_1$, he$_1$ let Mina scold.'

The fact that Condition C connectivity obtains in (51c) but not in (51b) is quite puzzling on a trace-based account of Condition C connectivity. Because both (51b) and (51c) involve scrambling, the trace left behind would be identical. If the trace is subject to Condition C, the coindexed pronoun *us-ne* should result in a Condition C violation (and hence ungrammaticality) in both cases; if the trace is not subject to Condition C, then both cases should be grammatical. By contrast, the account proposed here immediately derives this contrast: the occurrence in the launching site corresponds to the moving element, and so it is subject to Condition C only if the moving expression is an R-expression, as schematized in (52).

(52) a. *Copy-theoretic structure of (51b)*
he-ACC$_1$ … **he-ERG$_1$** … ⟨**he-ACC$_1$**⟩ … → *no Condition C effect*

b. *Copy-theoretic structure of (51c)*
*Ram-ACC$_1$ … **he-ERG$_1$** … ⟨**Ram-ACC$_1$**⟩ … → *Condition C effect*

While it is not possible to conduct this sort of test for SCO (given that testing for SCO requires binding from the landing site, which in turns requires that the scrambled element is not a pronoun), we take this contrast to be strong evidence for a copy-theoretic or multidominance-based approach to Condition C effects in scrambling.

6. Delaying case assignment

The account of Condition C connectivity and secondary SCO in Hindi developed in section 5 ties the (im)possibility of DP Late Merge to the Case Filter (30). It therefore makes a striking prediction: if it is possible to set up a configuration in which scrambling takes place *before* case is assigned, then neither Condition C connectivity nor SCO should arise. In other words, delaying the case assignment should make scrambling behave like English A-movement in these respects. Striking support for this conclusion has recently been presented w.r.t. Condition C by Gong (2022a,b) for Mongolian, and the account developed here predicts it to hold in Hindi as well. As we noted, in general scrambling obligatorily follows case assignment in Hindi, so it is not trivial to construct configurations that would bear on the prediction. In this section, we discuss one configuration in which scrambling seems to precede case assignment, and as we show, Condition C connectivity and SCO are alleviated in these cases.

The configurations in this section draw on the generalization that in Hindi animate pronouns, proper names, and quantified animate DPs may lack an overt case marker only if they are the subject of a finite clause (Bhatt 2007, Bhatia & Bhatt 2023). We assume that such DPs are subject to the Case Filter and that they bear nominative case if they lack an overt case marker. The fact that they can appear in this case only as the subject of a finite clause then indicates that nominative case is assigned by finite T in Hindi (a conclusion also reached by Bhatt 2007 and Bhatia & Bhatt 2023). If these DPs cannot be licensed by finite T, they must be licensed by another head, resulting in overt case morphology (such as accusative *-ko* in object position).

To illustrate this generalization with a proper name, we note first that this proper name must bear differential object marking if it is the object of a transitive verb, as shown in (53). Nominative case (i.e., a bare proper name) is impossible. We will follow Butt & King (2004), Keine & Müller (2015), Baker (to appear), and others in assuming that differential object marking is accusative case in Hindi (also see Baker & Vinokurova 2010 and Baker 2015 more generally). (53) then shows that a proper-name object of a transitive verb must receive accusative case in Hindi and cannot receive nominative case.[9]

[9]We emphasize that this restriction holds for animate pronouns, proper names, and quantified animate DPs, which we are interested in here, but not for all DPs in Hindi. Inanimate, indefinite DPs may appear without an overt case marker in object position and as the subject of a nonfinite clause (Bhatt 2007). Following Bhatt (2007), we assume that

(53) *Active: Object pronoun must bear* -ko

Anu-ne **Ram-ko/*Ram** bagiice-mẽ dekhaa thaa
Anu-ERG Ram-ACC/*Ram.NOM orchard-LOC see AUX
'Anu had seen Ram in the orchard.'

If the clause is passivized, the internal-argument proper name may either retain its accusative case or bear nominative case (54) (Bhatt 2007, Kidwai 2022).

(54) *Passive: Internal argument pronoun may be nominative*

Ram-ko/Ram bagiice-mẽ dekhaa gayaa thaa
Ram-ACC/Ram.NOM orchard-LOC see PASS AUX
'Ram had been seen in the orchard.'

If the passive configuration in (54) is placed into an nonfinite clause, nominative case is no longer licensed, and accusative case is required.

(55) *Infinitival passive sentence: nominative not licensed*

[**Ram-ko/*Ram** bagiice-mẽ dekhaa jaanaa] acchii baat hai
Ram-ACC/*Ram.NOM orchard-LOC see PASS good thing is
'For Ram to be seen in the orchard is a good thing.'

Given that *Ram-ko* 'Ram-ACC' is possible in (55), the impossibility of *Ram* 'Ram.NOM' in (55) cannot be due to a requirement that the subject of the nonfinite clause be a PRO. Instead, it is specifically nominative case that is unavailable in (55). We conclude from these facts that nominative case is licensed on DPs only in the context of finite T, hence that nominative case in Hindi is assigned by finite T.

The view that nominative is assigned by T immediately entails that nominative DPs remain caseless until finite T is merged. Scrambling of such DPs to a position below finite T should therefore precede case assignment. Our analysis predicts that this makes available a DP Late-Merge derivation. Testing this predictions is not trivial, however, because nominative case is normally assigned to the

these elements receive case from unaccusative v, which may however not license animate pronouns, proper names, and quantified animate DPs. Because we focus exclusively on the latter group here, this complication does not impact our argument.

external argument of a transitive verb or to the internal argument of an unaccusative verb. These are the already the structurally highest DPs below T, so we cannot assess whether scrambling them over another DP but below T affects Condition C and SCO. But there is at least one configuration that we believe has the required properties. The configuration that we will employ to assess the prediction involves small-clause constructions such as (56). Here, *Sangita-ko* 'Sangita-DAT' is an experiencer argument of the verb *lagtii* 'seem'. This verb embeds a small clause that contains the DP *Anu* 'Anu.NOM'.

(56) Sangita-ko **Anu** imaandaar lagtii hai
Sangita-DAT Anu.NOM honest seem AUX
'Anu seems honest to Sangita.'

In light of the conclusion above that nominative case is assigned by finite T in Hindi, *Anu* 'Anu.NOM' must receive nominative case from matrix T in (56). Correspondingly, if this configuration appears in a nonfinite clause, nominative-case DPs are no longer permitted (57).

(57) *No nominative in nonfinite clauses*
[sab-ko (***Anu**) imaandaar lagnaa] mere-liye mahatvapuurn hai
everyone-DAT Anu.NOM honest seem-INF me-for important is
'(*Anu) seeming honest to everyone is important to me.'

This small-clause construction thus has a useful constellation of properties. The nominative DP receives case from finite T, and a matrix experiencer DP may intervene between the nominative DP and finite T. This opens up the possibility of scrambling the to-be-nominative DP over the experiencer DP, but before nominative case is assigned. As noted, the Late-Merge account developed here predicts that such scrambling should have access to DP Late Merge and hence that the movement does not display SCO or Condition C connectivity.

We first demonstrate the absence of Condition C connectivity. In (58) movement of the nominative DP *Anu-kii beṭii* 'Anu's sister' over the pronoun *use* 'her.DAT' does not reconstruct for Condition C. In this respect, the movement differs strikingly from 'standard' instances of scrambling in Hindi (cf. (20)).

(58) *No Condition C connectivity*

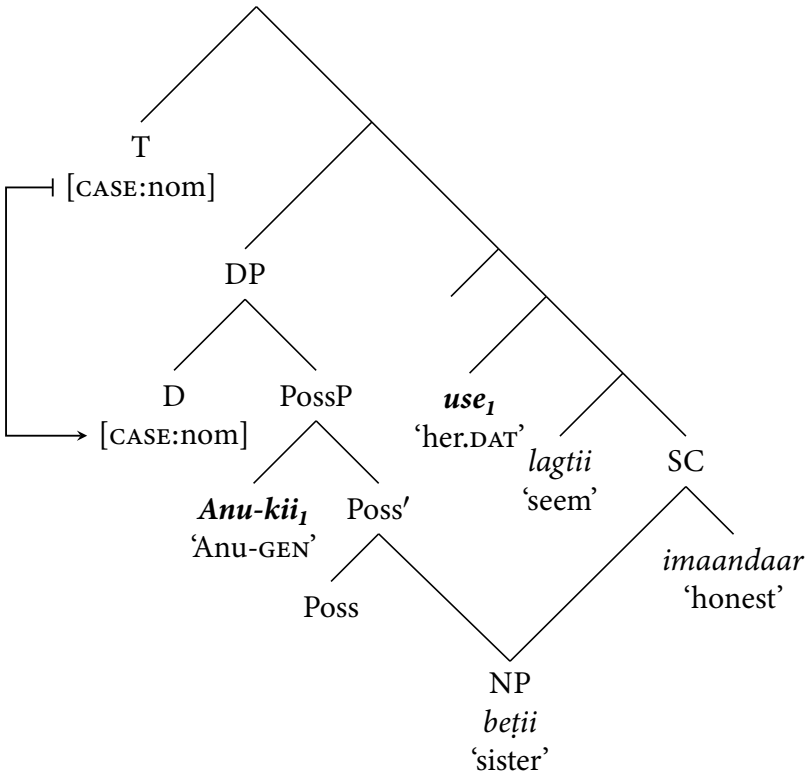
[**Anu-kii$_1$** beṭii]$_2$ **use$_1$** ___$_2$ imaandaar lagtii hai

Anu-GEN sister her.DAT honest seem AUX

'Anu's$_1$ sister, seems honest to her$_1$.'

The absence of Condition C connectivity follows from the analysis developed in section 5, as depicted in (59). Because the DP *Anu-kii beṭii* 'Anu's sister' does not receive case until matrix T is merged, it is possible for this DP to scramble over the experiencer DP *use* 'her.DAT' prior to case assignment. This permits a Late-Merge derivation in which the DP layer and the possessor *Anu-kii* are added late. As a result, *Anu-kii* is not c-commanded by the pronoun *use*, and Condition C is not violated.

(59) *Derivation of (58) with Late Merge of PossP and DP*



Next, we turn to SCO. We observe first that animate quantificational DPs require nominative case from T in these constructions, just like proper names. They may be nominative as the subject of a finite passive clause (60), but not as the subject of a nonfinite clause ((61), (62)).

(60) **har laṛkii** bagiice-mẽ dekhii gayii thii
every girl.NOM orchard-LOC see PASS AUX
'Every girl was seen in the orchard.'

(61) *[**har laṛkii** bagiice-mẽ dekhaa jaa-naa] acchii baat hai
every girl.NOM orchard-LOC see PASS-INF good thing is
Intended: 'For every girl to be seen in the orchard is a good thing.'

(62) [sab-ko (***har laṛkii**) imaandaar lagnaa] mere-liye mahatvapuurn hai
everyone-DAT every girl.NOM honest seem-INF me-for important is
'(*Every girl) seeming honest to everyone is important to me.'

We can now test for crossover. First, there is also no secondary WCO effect in these constructions, but this is of course not surprising:

(63) *No secondary WCO*
[**har laṛkii-kaa$_1$** dost]$_2$ [**us-kii$_1$** behin-ko] ___$_2$ imaandaar lagtaa hai
every girl-GEN friend s/he-GEN sister-DAT honest seem AUX
'For every girl *x*, *x*'s friend seems honest to *x*'s sister.'

Strikingly, there is also no secondary SCO in these constructions, as shown in (64).

(64) *No secondary SCO*
[**har laṛkii-kaa$_1$** dost]$_2$ **use$_1$** ___$_2$ imaandaar lagtaa hai
every girl-GEN friend s/he.DAT honest seem AUX
'For every girl *x*, *x*'s friend seems honest to *x*.'

Given our claim that (secondary) SCO is an instance of Condition C, the account of (64) is analogous to that of (58): the DP layer and the possessor *har laṛkii-kii* 'every girl's' may be added late, respecting Condition C.

The data in this section provide support for the crucial role of case in the account of SCO and Condition C connectivity. External Remerge of DP is possible only up until the point at which case is assigned. Because scrambling typically follows case assignment, it does not have access to

an External-Remerge derivation and hence patterns like English A′-movement in this respect. But once case assignment is delayed until after the scrambling step has taken place, External Remerge becomes possible, obviating Condition C and SCO. This finding provides particularly clear evidence that the Condition C and SCO facts should not be stipulated as inherent properties of scrambling. Instead, they are better analyzed as consequences of other general properties of scrambling (namely, its relationship to case), which may not hold in certain specific configurations.

These conclusions converge strikingly with independent recent work by Gong (2022a,b), who shows that in Mongolian, movement that feeds case assignment does not show Condition C connectivity, even if it lands in an A-position. We take this convergence to be strong support for a case-based account of Hindi scrambling as well.

7. Summary: Launching-site properties vs. landing-site properties

The starting observation of this paper was that Hindi scrambling displays an asymmetry w.r.t. WCO and SCO. Scrambling is not subject to (secondary) WCO, but it is subject to SCO. This asymmetry provides new empirical evidence for models of crossover that attribute WCO and SCO to at least partially different constraints. We proposed an analysis that attributes a movement type's WCO and SCO properties to different components of the dependency. WCO is determined by the nature of the *landing site:* if the landing site is an A′-position, WCO arises; if the landing site is an A-position, WCO does not arise. Against the background of this assumption, the absence of WCO entails that Hindi scrambling targets (or at least may target) an A-position (Mahajan 1990, 1994). It also entails that SCO must be attributed to a factor other than the nature of the landing site. We also observed that the distribution of SCO correlates with the distribution of Condition C connectivity in Hindi. This convergence provides clear empirical support for models that attribute SCO to Condition C, as proposed by Chomsky (1981), but within a copy-theoretic or multidominance-based framework for movement. We then showed that the distribution of Condition C connectivity (and hence SCO) follows in a principled manner from Thoms & Heycock's (2022) External-Remerge account of (anti-)reconstruction effects (which itself builds on Takahashi 2006, Takahashi & Hulsey 2009 and, ultimately, Lebeaux 1988, 2000) once this model is extended to scrambling. The gist of this account is that Condition C connectivity results from the properties of the *launching site* of movement, which

are in turn determined by case. Because scrambling ordinarily follows case assignment (like English A′-movement), the launching site must contain the full DP structure of the moving element, resulting in Condition C connectivity and SCO w.r.t. possessors. The relevant aspects of this analysis are summarized in (65).

(65) *Summary*

	English A-movement	Hindi scrambling before case	Hindi scrambling after case	English A′-movement
Type of landing site	A	A	A	A′
(Secondary) WCO	N	N (63)	N (11)	Y
(Secondary) SCO	N	N (64)	Y (12)	Y
Possessor Condition C connectivity	N	N (58)	Y (20b)	Y
Feeds case?	Y	Y	N	N

In a nutshell, Hindi scrambling patterns like English A-movement w.r.t. its landing site (an A-position); but it typically patterns like English A′-movement w.r.t. its launching site (which does not receive case). The observation that scrambling shows SCO effects but not WCO effects thus supports the view that WCO is a function of a movement's landing site whereas SCO is a function of the case properties of its launching site. Furthermore, the contrast between scrambling that precedes case assignment and scrambling that follows case assignment constitutes a challenge for any account that simply stipulates the crossover and Condition C properties of scrambling: neither SCO nor Condition C connectivity is an inherent property of scrambling. Instead, the contrast underscores the need to not treat movement types as theoretical primitives but to decompose them, in particular—for the cases discussed here—into properties of the landing site (A- vs. A′-position) and properties of the launching site (case assignment). As we saw, a decompositional view naturally extends to instances of scrambling that differ w.r.t. SCO and Condition C connectivity.

These results also inform debates about the nature of Hindi scrambling w.r.t. the A/A′-distinction. From one perspective, the evidence presented here argues for treating Hindi scrambling as a third

type of movement that cannot be reduced to either English A- or A′-movement (in line with, e.g., Webelhuth 1989, 1992 and Dayal 1994, and contra Mahajan 1990, 1994). On the other hand, the analysis proposed here does not need to postulate a new type of movement as a theoretical primitive (in line with Mahajan's 1990, 1994 overall conclusion). By decomposing the overall properties of a movement type w.r.t. crossover and Condition C into properties of the landing site and properties of the launching site, the "mixed" behavior of scrambling w.r.t. crossover and Condition C connectivity follows directly. This allows us to account for the properties of scrambling without treating it as a third type of movement, analytically unrelated to English A- or A′-movement.

8. Implications for the typology of movement types

Because the analysis presented here derives the properties of a given movement step from the properties of its landing and launching sites, it makes predictions about the typology of movement types w.r.t. crossover effects and Condition C connectivity. This typology is given in (66).

(66) *Launching-site properties and landing-site properties*

		Launching site	
		no case assigned → DP Late-Merge possible	case assigned → DP Late-Merge impossible
Landing site	A-position	*English A-movement*	*Hindi scrambling*
	A′-position	???	*English A′-movement*

In principle, the account permits a fourth type of movement—one that targets an A′-position but may feed case assignment (the '???' cell in (66)). The model predicts that such a movement type can never feed pronominal binding, regardless of the structural relationship between the pronoun and the launching site and that it does not show Condition C connectivity with arguments and possessors. It is not clear to us whether such a movement type is empirically attested, and hence whether this prediction is pathological. One potential candidate is long scrambling in Mongolian for some speakers, based on Gong (2022b) (also see Fong 2019). Gong shows that while for some speakers, such scrambling may feed reciprocal binding, for others it may not. That is, there is a split between speakers as to whether (67b) permits binding of the reciprocal *biebieniikh in* by the scrambled DP *ter khoyor-ig* 'those two'.

(67) a. *[**Biebieniikh in$_1$** bagš] [$_{CP}$ Bat-ig önöödör khural deer **ter khoyor-ig$_1$**
each other's teacher Bat-ACC today meeting on that two-ACC
šüümjil-sen gej] khel-sen.
criticize-PST C say-PST
Intended: 'Each other's$_1$ teacher said that Bat criticized those two$_1$ at the meeting today.'

b. #**Ter khoyor-ig$_1$** [**biebieniikh in$_1$** bagš] [$_{CP}$ Bat-ig önöödör khural deer
that two-ACC each other's teacher Bat-ACC today meeting on
___$_1$ šüümjil-sen gej] khel-sen.
criticize-PST C say-PST
'Those two$_1$, each other's$_1$ teacher said that Bat criticized at the meeting today.'

(Gong 2022b: 95, ex. (148))

Importantly, long scrambling in Mongolian obviates Condition C violations, as shown in (68).

(68) a. *Bi **tüün-d$_1$** [$_{CP}$ [**Bat-in$_1$** eej-iig] sain khün gej] khel-sen.
I him-DAT Bat-GEN mother-ACC good person C say-PST
Intended: 'I said to him$_1$ that Bat's$_1$ mother is a good person.'

b. ?[**Bat-in$_1$** eej-iig]$_2$ bi **tüün-d$_1$** [$_{CP}$ ___$_2$ sain khün gej] khel-sen.
Bat-GEN mother-ACC I him.DAT good person C say-PST
'Bat's$_1$ mother, I said to him$_1$ is a good person.' (Gong 2022b: 135, ex. (198))

Mia Gong (p.c.) confirms that there are speakers for who (67b) is ungrammatical, but (68b) is grammatical. This pattern of judgments might then be analyzed as scrambling that targets an A′-position (thus preventing binding) but that nonetheless feeds case assignment (for arguments that this scrambling feeds case assignment, see Fong 2019 and Gong 2022b). Because the scrambling feeds case assignment, it permits DP Late Merge, and hence obviates Condition C effects with possessors. Of course, more work would be necessary to establish this conjecture more securely, and so we are at present hesitant to consider this Mongolian pattern a clear confirmation of the '???' cell in (66).[10] Nonetheless, there is at least some indication that the full typology in (66) might be borne out,

[10]Particularly problematic for any approach that attempts to analyze the Mongolian pattern as instantiating the '???' cell in (66) is the fact that replacing the reciprocal pronoun in (67) with a reflexive pronoun improves binding:

with the properties of the landing site in principle completely decoupled from the properties of the launching site.

Another significant consequence of the account proposed here is that Hindi fills out a typology of movement types predicted by Takahashi's (2006), Takahashi & Hulsey's (2009), and Thoms & Heycock's (2022) systems. As we emphasized throughout, one important property of Thoms & Heycock's (2022) Late-Merge account (shared by Takahashi & Hulsey's 2009 Wholesale Late Merger account) is that the availability of Late Merge is not conditioned directly by the A/A′-distinction (that is, the nature of the landing site), but rather by case. For prototypical A- and A′-movement of the English type, the two correlate, but Takahashi & Hulsey (2009) and Thoms & Heycock (2022) point out that this is not necessarily the case. They in particular draw attention to surprising Condition C obviation in some instances of English A′-movement. Thoms & Heycock (2022) provide the headed-relative example in (69), noting that no Condition C connectivity arises here, despite the fact that the R-expression *John* is in an argument PP and the movement is A′-movement. See Thoms & Heycock (2022) for arguments that the matching analysis of relative clauses does not provide a comprehensive solution to antireconstruction in such relative clauses. Similar effects can also be found in free relatives (Citko 2002, Takahashi & Hulsey 2009).

(69) I'll buy [the [picture of **John$_1$**]$_2$ that **he$_1$** likes ___ $_2$]. (Thoms & Heycock 2022: 160, ex. (5a))

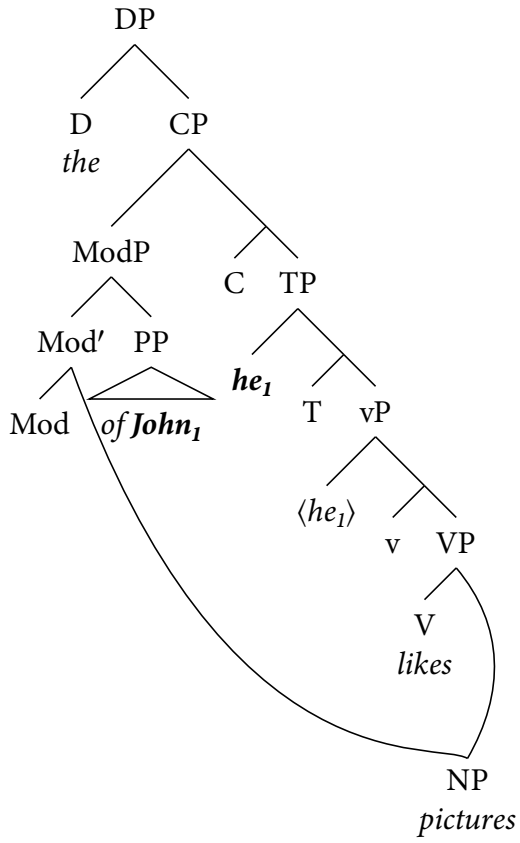
Thoms & Heycock (2022) analyze (69) in terms of DP Late Merge, with the relative-clause structure in (70). Assuming a head-raising analysis, the crucial fact in (70) is that the case of the DP heading the relative clause is assigned from outside the relative clause. This opens up the possibility of DP Late Merge under A′-movement *without* violating the DP Case Filter. Because DP Late Merge is thus permitted, adnominal arguments such as *of John* in (69) can be late-merged as well, circumventing

(i) a. *[**Öör-iin khni$_1$** ekhner ni] [$_{CP}$ ene emč-ig öngörsön jil **öwčtön bolgon-ig$_1$**
self-GEN 3SG.POSS wife 3SG.POSS this doctor-ACC last year patient every-ACC
awar-san gej] khel-sen
save-PST C say-PST
Intended: 'His$_1$ (own) wife said that this doctor saved every patient$_1$ last year.'

b. ?**Öwčtön bolgon-ig$_1$** [**öör-iin khni$_1$** ekhner ni] [$_{CP}$ ene emč-ig öngörsön jil
patient every-ACC self-GEN 3SG.POSS wife 3SG.POSS this doctor-ACC last year
___ $_1$ awar-san gej] khel-sen
save-PST C say-PST
'Every patient$_1$, his$_1$ (own) wife said that this doctor saved last year.' (Gong 2022b: 94, ex. (147))

a Condition C effect. (70) thus provides support for dissociating the A/A′-nature of the landing site from the availability of DP Late Merge.

(70) *Thoms & Heycock's (2022: 166) DP Late Merge structure of (69)*



In addition to providing further evidence that DP Late Merge does not directly track the A/A′-distinction, our account also treats Hindi scrambling as basically the opposite constellation of properties from the headed relative in (69). In (69), the movement targets an A′-position, but because it precedes case assignment, it has access to DP Late Merge. In Hindi scrambling, the movement targets an A-position, but it follows case assignment and therefore does not have access to DP Late Merge. This leads us to the typology in (71).

(71) *Typology of movement types w.r.t. crossover effects*

		DP Late Merge possible?	
		Yes	No
Type of landing site	A	*English A-movement*	*Hindi scrambling*
	A′	*headed relatives*	*"standard" A′-movement*

Dissociating the nature of the landing site from the representation of the moved element in its launching site thus naturally makes room for "mixed" patterns such as the headed relatives and Hindi scrambling.

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