Keine, Stefan & Bhatt, Rajesh. 2025. Crossover asymmetries. *Syntactic Theory and Research* 1.1.3. https://doi.org/10.16995/star.17646.

Crossover asymmetries

Stefan Keine, University of California, Los Angeles, US, keine@ucla.edu

Rajesh Bhatt, University of Massachusetts Amherst, US, bhatt@linguist.umass.edu

Weak crossover and strong crossover are standardly attributed to at least partially different constraints, despite clear parallels in their distribution in English. Specifically, the standard analysis of strong crossover 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 article, we argue that scrambling in Hindi-Urdu bears out this prediction. We show that local scrambling displays secondary-strong-crossover effects but not secondary-weak-crossover effects, and we furthermore show 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. Focusing primarily on the distribution of strong crossover and Condition C connectivity, we propose an analysis that extends to scrambling a DP-late-merge account of Condition C obviation, 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 Ā-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 works 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 the Ā-trace, as in (1); **weak crossover** (WCO) arises if the pronoun does not c-command the Ā-trace, as in (2).[1] See Lasnik & Funakoshi 2017 and Safir 2017 for recent overviews.

(1) SCO
a. *DP_1 ... $pron_1$ ... t_1
b. ***Who**$_1$ does **she**$_1$ like ___$_1$?*

(2) WCO
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–Ā distinction. Ā-movement is subject to both, whereas A-movement is subject to neither:[2]

(3) a. Ā-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.*

[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 Ā-movement.

[2] While *herself* appears to be inside a PP in (3b), it is well known that the indirect object in this construction behaves as if it c-commands the embedded clause. Most importantly for our purposes, it triggers Condition C effects with respect to R-expressions in the embedded clause:

(i) a. **It seems to **her**$_1$ that **Mary**$_1$ is a genius.*
b. **John seems to **her**$_1$ to like **Mary**$_1$.*

For possible lines of analysis, see Pesetsky 1995, Kayne 2000, 2005, and Hartman 2012. Facts analogous to (3b) hold for *strike-as* constructions, which likewise involve A-movement over an intervening DP but one that is not inside a PP (Marantz 1991):

(ii) a. ***Mary**$_1$ strikes **herself**$_1$ as ___$_1$ being a genius.*
b. ***Every girl**$_1$ strikes **herself**$_1$ as ___$_1$ being a genius.*

(4) a. Ā-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*] ___$_1$ *to be genius.*

Despite the parallels in their distribution, SCO and WCO are standardly analyzed quite differently. Following Chomsky 1981, which 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 Ā-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 Ā-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 specifically rule out WCO configurations. Examples include Koopman & Sportiche 1983's **Bijection Principle** and Safir 1984's **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 1971's **Crossover Principle,** Van Riemsdijk & Williams 1981's **NP-structure** account, Reinhart 1983's A-binding requirement, and Safir 2004 and 2019's **Independence Principle.** For example, a constraint to the effect that pronominal binding is possible only from a c-commanding A-position (Van Riemsdijk & Williams 1981, Reinhart 1983) 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 in fact ruled out twice (e.g., Grodzinsky & 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 shown 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, Grodzinsky & Reinhart 1993: 76, fn. 6; see Ross

et al. 2023 for a recent experimental confirmation of this difference). While this is certainly suggestive, it is worth noting that standard models of syntax only involve 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 due to Condition C but WCO is not, then we might expect to find movement types that display SCO but not WCO.

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

To derive this distribution of SCO and Condition C connectivity, we build 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, much subsequent work). Due to late merge, this syntactic material is 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 Thoms 2019 and Thoms & Heycock 2022, which analyze Condition C obviation as the result of **external remerge:** merge of a bare NP in the premovement position and late addition of a DP shell in the landing site. To limit such a derivation to English A-movement, Thoms & Heycock 2022 proposes (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 Ā-movement), a view additionally supported by Gong 2022 and 2025. We show that this account neatly generalizes to Hindi scrambling: like English Ā-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 article is (secondary) SCO and how to analyze it. We will be less concerned with the proper analysis of WCO. The comparison between the distributions 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.

The article is structured as follows. Section 2 demonstrates the diverging distributions of SCO and WCO in Hindi. Section 3 and section 4 present our analysis of WCO and SCO, which is then applied to the Hindi data in section 5. Section 6 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 SCO and WCO 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 Ā-movement in these respects (Mahajan 1990, Gurtu 1992). We provide illustrative examples in appendix B (see supplementary material), but long-distance scrambling will play no role in the main text, 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, Gurtu 1992, Mahajan 1994). This is illustrated in (5), where

scrambling of the object *har laṛke-ko* 'every boy-ACC' over the subject *uskii behin-ne* 'her/his sister-ERG' makes binding of the 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. The sentence in (6) involves binding of *apne aap* by a scrambled object, violating the subject orientation. As a result, (6) is correctly ruled out even if scrambling is not subject to SCO. Therefore, the contrast between (5) and (6) by itself does not establish that Hindi scrambling differs with respect to 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 1993a). In such configurations, the quantifier that binds the pronoun is not the moving element itself but is embedded

inside the moving element (in the examples that follow, it is a possessor). As we now show, in such configurations a systematic contrast arises between WCO and SCO.

Like English, Hindi allows **inverse linking,** where 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):

(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 have involved binding by a possessor in a base-generated configuration. Binding by a possessor may also be fed by scrambling, as (11) shows.

(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.'

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.

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

(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.'

In other words, (12) shows that scrambling is subject to secondary SCO. Crucially, 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 nonmovement counterpart in (8)).

In what follows, we adopt the view that possessor binding is **direct:** the bound pronoun is bound by and hence coindexed with the possessor (*har laṛke-kii* 'every boy-GEN' in the examples above). An alternative, pursued by Chierchia 2023, is to coindex the pronoun with the container DP itself (e.g., coindex *us-ne* 'he-ERG' with *har laṛke-kii behin-ko* 'every boy's sister-ACC') and then treat the pronoun as an E-type pronoun (Evans 1977, 1980): a pronoun that for every sister returns that sister's brother(s). We will not pursue this line of account here; see appendix A in the supplementary material for discussion. Given our argument that the possessor does not undergo raising out of the container DP, our view that the pronoun is bound by the possessor requires that binding does not demand c-command. See Barker 2012 for general arguments to this effect, and see Kobele 2010, Barker & Shan 2014, and Bumford & Charlow 2022 for specific analyses.

The relevant structure of (12) is schematized in the following.

(13) *['every boy's$_1$ sister']$_2$ ... 'he'$_1$ ... t$_2$ ...

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 (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. 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 Ā-movement, where the two correlate. As shown in (14) and (15), Ā-movement displays both secondary WCO and secondary SCO (see Higginbotham 1980, Van Riemsdijk & Williams 1981, Safir 1984, Postal 1993a, Safir 1999, Ruys 2000, Safir 2017), whereas A-movement displays neither (unsurprisingly given that A-movement does not show crossover effects in general).

(14) English Ā-movement: secondary SCO and WCO
   a. *[***Whose**$_1$ *mother*]$_2$ *does* ***he**$_1$ *admire* ___$_2$*?*
   b. *[***Whose**$_1$ *mother*]$_2$ *do* [***his**$_1$ *friends*] *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 with respect to (secondary) WCO but like English Ā-movement with respect to (secondary) SCO, as summarized in (16).[3]

(16) Summary: distribution of crossover effects

	English A-movement	Hindi scrambling	English Ā-movement
WCO	No (4b)	No (5)	Yes (4a)
Secondary WCO	No (15b)	No (11)	Yes (14b)
Secondary SCO	No (15a)	Yes (12)	Yes (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

[3] Nonsecondary SCO is omitted from (16) due to the difficulties in interpreting examples like (6), discussed above.

distribution. The Hindi facts also connect to important debates on the relationship between scrambling and the A–Ā distinction. It is well known that scrambling displays a "mixed" behavior with respect to traditional A- and Ā-properties, including issues of locality, parasitic-gap licensing, and WCO. How scrambling relates to A- versus Ā-movement has been the subject of considerable debate, ranging from analyses that treat scrambling as A-movement or Ā-movement (e.g., Saito 1985, Fanselow 1987, Saito 1989, Fanselow 1990, Mahajan 1990, Müller & Sternefeld 1993, Mahajan 1994, Müller & Sternefeld 1994, Müller 1995) to analyses that treat it as a genuinely mixed type of movement (e.g., Webelhuth 1989, 1992, Browning & Karimi 1994, Dayal 1994). The distribution of properties in (16) adds a novel empirical dimension to this debate. In addition, it deepens questions about the extent to which scrambling can be treated as pure A- or Ā-movement and about the extent to which certain properties of scrambling may be derived from other properties of scrambling.

3 Binding and WCO

As mentioned in section 1, because our focus in this article 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).[4] We will simply assume, therefore, that binding is possible only from A-positions (Reinhart 1983). This assumption may be implemented in a number of

[4] 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. According to Mahajan 1990: 32–33 and 1994: 307, local scrambling may feed binding of the reflexive pronoun *apnaa* (also see A. Kidwai 2000: 5), while Jones 1993: 80 and Dayal 1994: 242 report that such binding is impossible. The latter judgment is illustrated in the following.

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

The example in (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:

ways. One possibility is the account of Büring 2004 and 2005, 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 2004: 25, 2005: 169).[5] Another analytical option is to assume that local scrambling (which is not subject to WCO) and long-distance scrambling (which is subject to WCO: see appendix B in the supplementary material) differ in the type of variable they leave behind. Sauerland 1998, Ruys 2000, and Sauerland 2004 propose that Ā-movement is interpreted via λ-abstraction over choice functions whereas A-movement involves λ-abstraction over an individual-type variable. By assumption, 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 Ā-position. Within this approach, local scrambling would then involve λ-abstraction over type-e variables (also see Van Urk 2015 and, for Hindi specifically, Poole & Keine 2024). A third option is, following Van Riemsdijk & Williams 1981, Williams 2003, and Williams 2013, to 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, and 2020 for evidence to this effect). Within the assumptions of Van Riemsdijk & Williams's and Williams's 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. Finally, Chierchia 2020 and 2023 develop an account in which pronominal binding is possible only from positions that introduce discourse

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

Not all speakers show the pattern in (ii); according to Mahajan 1990: 34 and Gurtu 1992: 24, the reflexive can be bound 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–Ā 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 Ā-position.

[5] Because Büring's β-operator combines with constituents of type ⟨e, t⟩, the structure of A-movement on this account involves a prior step of λ-abstraction over the trace via a distinct operator "μ_n" (Büring 2005: 245).

referents. Local and long-distance scrambling can then be treated as differing in this regard, though it is not clear to us that there is independent support for this view.

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

4 Case, Condition C, and SCO

We now turn to the analytical puzzle posed by the secondary-SCO facts. The crucial contrast is repeated in the following.

(17) a. 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.'
= (12)

b. … 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.'
= (11)

Regardless of whether the scrambling in (17) is taken to target an A- or Ā-position, the contrast does not follow. If scrambling targets an Ā-position, binding is incorrectly ruled out in (17b); if scrambling targets an A-position, then all else being 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, per the following definitions.

(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 coindexed with a pronoun in subject position, as in (20a). Crucially, scrambling does not amnesty such Condition C violations, as (20b) shows. That is, coindexation is still ruled out in (20b) despite the fact the R-expression is no longer c-commanded by the pronoun after scrambling.

(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.'

In other words, Hindi scrambling displays Condition C connectivity with possessors.

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, coindexation 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. This is

schematized in (22): a secondary-SCO effect corresponds to DP-GEN in (22) being a quantificational DP, while 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 WCO 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 strongly suggest 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, the traditional trace-based Chomsky 1981 account of SCO in terms of Condition C is insufficient. On this account, the trace of Ā-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 with respect to the moving element itself but instead with respect to 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, including at least 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 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).[6]

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

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 an account of Condition C connectivity that arises with respect to elements contained within the moved expression, as shown in (24), where ⟨[DP-GEN$_1$ …]⟩ represents the unpronounced lower copy.[7]

(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 induce Condition C connectivity in complex ways. In English, Ā-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 Ā-movement but not with A-movement, as illustrated in (25) and (26).

(25) (Absence of) Condition C connectivity with argument clauses
a. Ā-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, (93a, 94))

(26) (Absence of) Condition C connectivity with argument PPs
a. Ā-movement
*[*Which picture of* ***John***$_1$]$_2$ *did* ***he***$_1$ *buy* ___$_2$*?*
b. A-movement
[*Those pictures of* ***John***$_1$]$_2$ *seem to* ***him***$_1$ ___$_2$ *to have been doctored.*
(Thoms & Heycock 2022: 159, (2, 4))

[7] 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 (Gereon Müller, personal communication). 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.

A common intuition that the literature on this contrast has pursued is that A-movement leaves an impoverished representation of the moved expression in the launching site whereas Ā-movement leaves behind a more complete representation of the moved 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 2019's and Thoms & Heycock 2022's **external-remerge** account of the contrast in (25) and (26). Thoms and Thoms & Heycock propose that English A-movement allows the launching site to contain only an NP (for them nP, a distinction that we abstract away from here), with the DP portion merged later, before the moved element is merged in its landing site (this idea, though implemented quite 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 nodes. The two root nodes are then merged with each other, yielding a single root node. Unlike other conceptions of late merge (like Lebeaux 1988 and 2000's **Adjoin-α** or Takahashi & Hulsey 2009's **wholesale late merge**), 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 2009's Root Condition on Merge, stated in (27).

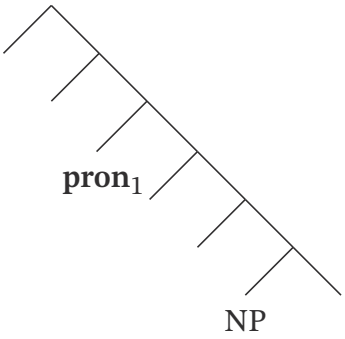
(27) Root Condition
If α and β are selected as input for Merge, then α or β (or both) must be a root. (De Vries 2009: 357)

Thoms & Heycock 2022 accounts for the absence of Condition C connectivity for arguments with English A-movement (25b, 26b) by means of the derivation in (28) below. First, Thoms & Heycock assume, with 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, they assume that A-movement permits a derivation in which only an NP is merged in the premovement position. Third, they assume that nominal material above NP may be externally merged on top of the NP and the resulting constituent merged into a higher position.

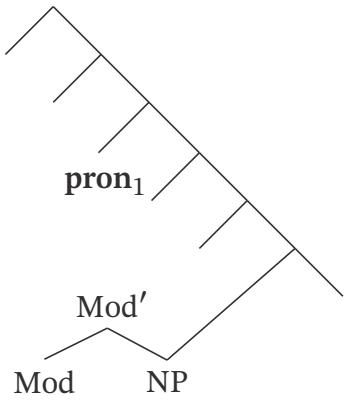
The resulting derivation for Condition C obviation under A-movement is shown in (28). First, only the NP is merged in the premovement position, lacking all adjuncts and arguments (28a). Second, the NP node is remerged with Mod, creating a structure in which the NP node has two mothers and the structure 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 this derivation), 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

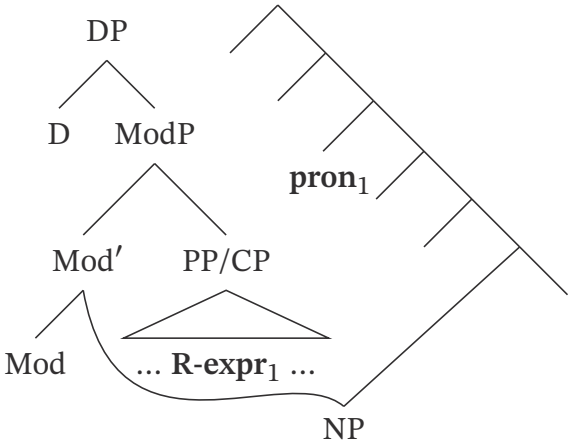
a. Step 1: merge of just NP



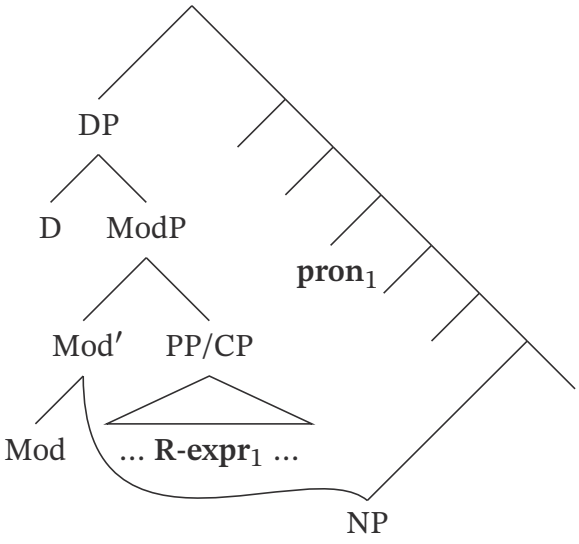
b. Step 2: external remerge of NP



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).[8]

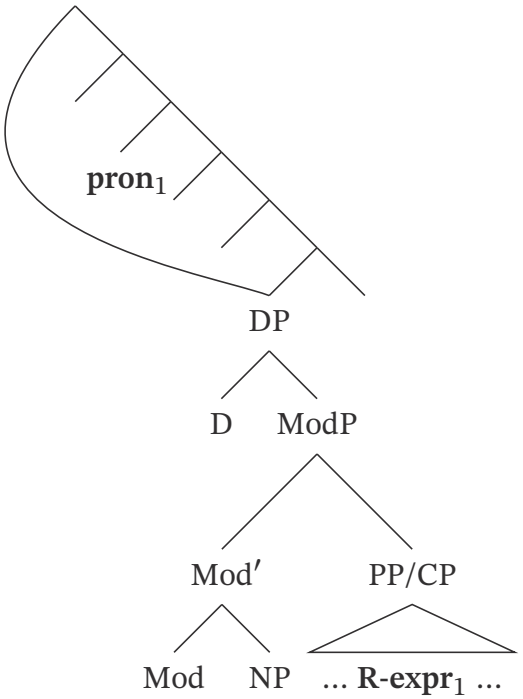
As with all multidominance theories of movement, questions arise as to how to determine which position an element is linearized in. Because all the movements we consider in this article are overt, it suffices to say that it is the highest occurrence

[8] Thoms & Heycock 2022 does not discuss cases like (i), where what is at stake is not Condition C with the possessor of the moving element but Condition C with the moving element itself.

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, Ā-movement shows Condition C connectivity in these cases (25a, 26a). This means that an external-remerge derivation as in (28) must be unavailable for Ā-movement and that Ā-movement must require the full DP structure to be present in the premovement position:

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



(i) ***Mary***$_1$ *seems to* ***herself***$_1$ ___$_1$ *to be a genius.*

In order to avoid a Condition C violation, the representation of the moved element in its base position must not induce a Condition C violation with respect to *herself*. We assume that this follows from the fact that Condition C (and binding theory in general) operates only on maximal (extended) projections of nominals, which in our system are DPs. Indices on nonmaximal projections are invisible to the binding theory. Büring 2005: 1 makes this point explicitly: see in particular his fn. 1 (though note that his NPs are our DPs). In (i), the DP associated with *Mary* c-commands *herself* but is not itself c-commanded by *herself* because it is not part of the premovement position. The derivation proceeds exactly as in (28) but without the modifiers. Our thanks to a reviewer for helpful comments on this question.

Why is external remerge of this kind available for English A-movement but not for English Ā-movement? Building on Takahashi 2006 and Takahashi & Hulsey 2009, Thoms & Heycock's propose that this follows from considerations of case (also see Gong 2022, 2025). 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:[9]

(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, Ā-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 Ā-movement step, as this DP layer would remain without case, violating the DP Case Filter (also see Takahashi & Hulsey 2009 and Thoms & Heycock 2022 for arguments that when case is not an issue, Ā-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 Ā-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 2022's account derives the contrast between English A- and Ā-movement's ability to obviate Condition C violations (as does Takahashi & Hulsey 2009's 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 account seems to require a complete representation of the moved expression in the launching site of Ā-movement, which would be too strong. It is standardly recognized since Freidin 1986, Lebeaux 1988,

[9] It is immaterial for our account whether NP is subject to the Case Filter as well. Because in Thoms & Heycock's account the NP is never late merged, the NP would always satisfy the Case Filter. In this respect, Thoms & Heycock's account differs from the wholesale-late-merge account of Takahashi 2006 and Takahashi & Hulsey 2009, where it is the NP that is late merged and that must hence be subject to the Case Filter. Alternatively, it is possible that NPs receive case indirectly from D or DP via concord.

and Lebeaux 2000 (building on Van Riemsdijk & Williams 1981) that English Ā-movement does not induce Condition C connectivity with respect to R-expressions inside adjuncts. Thus, we observe Condition C connectivity with argument clauses, as in (31a), but not with relative clauses, as in (31b).

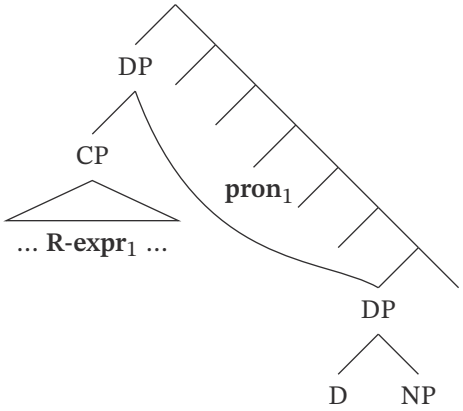
(31) a. *[*Which report that* ***John***$_1$ *was incompetent*]$_2$ *did* ***he***$_1$ *submit* ___$_2$*?*
b. [*Which report that* ***John***$_1$ *revised*]$_2$ *did* ***he***$_1$ *submit* ___$_2$*?*
(Freidin 1986: 179, (76))

The traditional account of such effects is due to Lebeaux 1988 and 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 Ā-movement, in which case *John* is not c-commanded by *he* and Condition C is obeyed. The ungrammaticality of (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 2019's and Thoms & Heycock 2022's system, the late addition of adjuncts cannot be dependent on external remerge of DP because Ā-movement does not have access to a derivation that late merges the DP. Thoms & Heycock do not integrate adjuncts into their system, but there are a few options. One is to maintain Lebeaux's account: adjuncts can be countercyclically added to the moved constituent; that is, adjunction is not subject to the Root Condition (27).[10] An alternative is to 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 with respect to R-expressions within this relative clause. This is shown in (32), with linear order not represented.

[10] 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 and 2000 or Pair Merge in Chomsky 2004).

(32) External remerge of relative clause with English Ā-movement
→ no Condition C connectivity



Note that this analysis requires that relative clauses can attach after merging D—that is, that D and the NP may form a constituent that excludes the relative clause. Structures of this kind are also adopted by Hunter 2015 and Safir 2019; a semantics for them is proposed by Bach & Cooper 1978 and more recently Charlow 2020. For the sake of concreteness, we will assume in what follows that Condition C obviation with adjuncts in English Ā-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 2019's and Thoms & Heycock 2022's 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 account, following Takahashi 2006 and Takahashi & Hulsey 2009, does not tie the availability of external remerge to the A–Ā distinction itself but to case.

5.1 Condition C connectivity

Recall from section 4.1 that scrambling induces Condition C connectivity with possessors:

(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.'
= (20b)

While Thoms & Heycock do not discuss the status of possessors in their system, 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 account, DP late merge is possible only if the movement feeds case assignment. A general fact about scrambling in Hindi is that it does not affect a DP's case (see Keine 2018). In other words, the case a scrambled DP bears is the same as the case it would bear had scrambling not taken place. This is illustrated in (34) and (35). The examples in (34) show that the object *Ram* must bear accusative case *-ko*, regardless of whether scrambling takes place. An analogous observation is made in (35) 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/INS/GEN/Ø} saw
'Sita saw Ram.'

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

(35) Case connectivity: instrumental

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

b. *Sita-{se/*ko/*kaa/*Ø}$_1$ Pratap ___$_1$ milaa hai.*
Sita-{INS/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.[11]

[11] We will have little to say here about the mechanics of case assignment (e.g., how lexical case is assigned, whether the relevant cases are dependent cases or head cases, etc.), primarily because we believe that our account is compatible with a wide range

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, Kayne 1993, and Safir 1999 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. Thus, in (36a), where the container DP bears unmarked case, the genitive case marker (with a masculine singular head noun like 'son') takes the form *-kaa*; by contrast, in (36b) the container DP bears a case marker, and the genitive marker of the possessor takes the oblique form *-ke*.

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

b. *Anu-ne* [*Sita-**ke*** *beṭe-**ko***] *dekhaa.*
Anu-ERG Sita-GEN.M.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 shown in (37). The oblique form of the genitive marker then appears if it occurs in the domain of a D with certain case features.

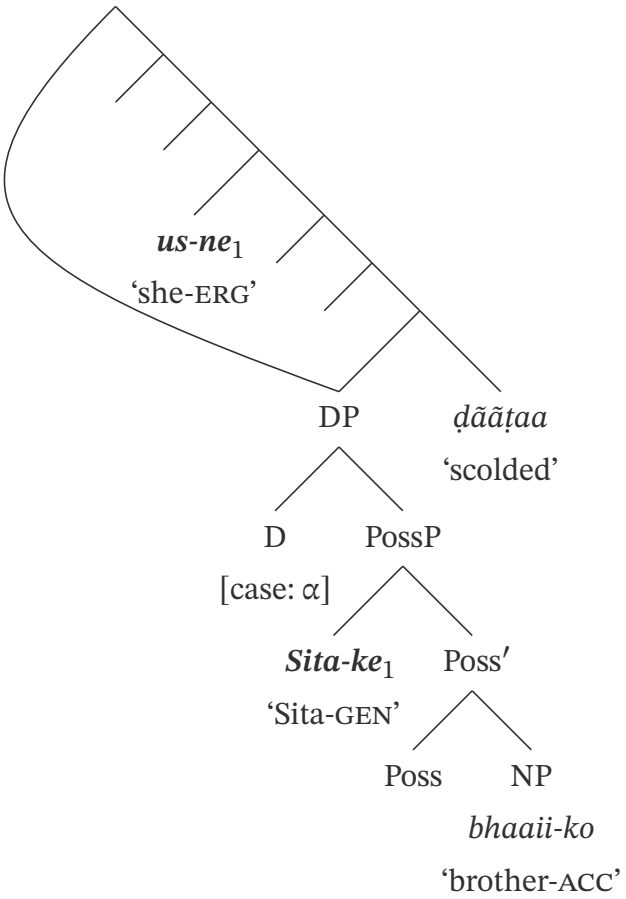
(37) $[_{DP}\ D_{[case:\ \alpha]}\ [_{PossP}$ DP-GEN Poss NP]]

---

of models of case assignment. What is crucial is that the Case Filter (30) holds and hence that DPs that are not assigned case lead to ungrammaticality. In particular, nominative case cannot be treated as the absence of a case value in Hindi (see section 6). While some current dependent-case models dispense with the Case Filter (Preminger 2011, 2014, Kornfilt & Preminger 2015, Levin 2015, Levin & Preminger 2015, Preminger 2024), this is not an inherent property of dependent case (e.g., Baker & Vinokurova 2010, Gong 2022, 2025), so the account proposed here does not require a specific commitment one way or the other. In section 6, we furthermore treat nominative case in Hindi as assigned by finite T. Case assignment by functional heads is widely adopted across models of case assignment, including dependent-case models (e.g., Baker 2015 and Preminger 2024, among others).

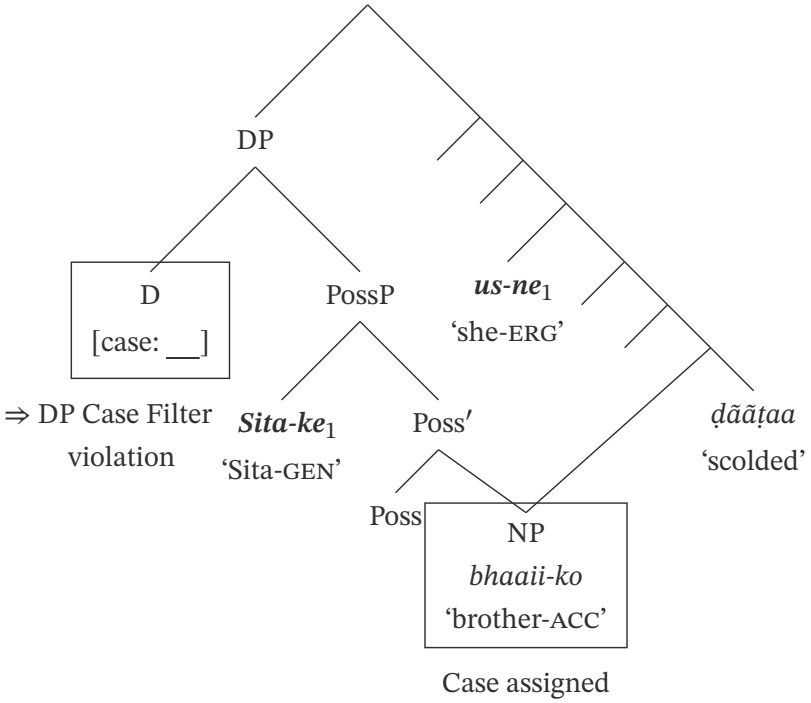
In conjunction with these assumptions about scrambling and the location of the possessor DP, Thoms & Heycock 2022's account derives the fact that scrambling does not obviation Condition C violations with possessors (33). As we now show, both early merge and late merge of the possessor are ungrammatical 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 violation



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. The derivation in (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 will produce a violation of both Condition C and the Case Filter.

Thoms & Heycock 2022's external-remerge account of Condition C connectivity with arguments can thus be extended to possessors and scrambling. It derives the fact 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 Ā-movement with respect to Condition C connectivity precisely because it shares with English Ā-movement its relationship to case: the moving element receives case before the movement applies, prohibiting late merge of DP and PossP.

5.2 SCO

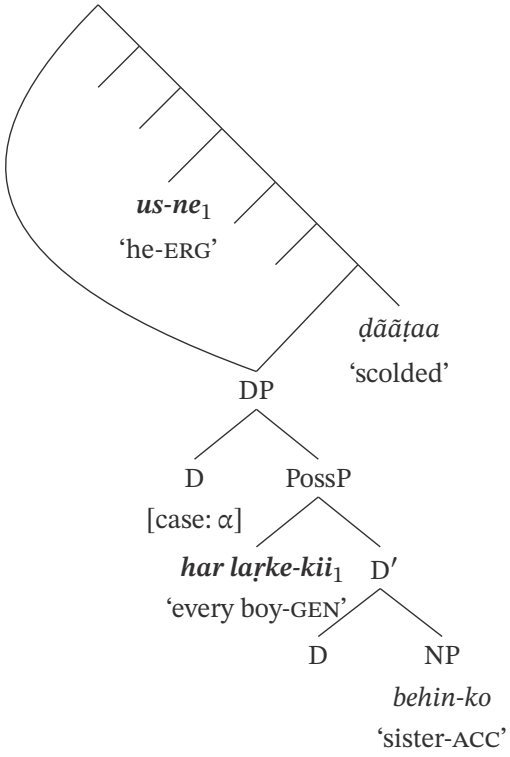
We now turn to the (secondary-) SCO facts in section 2.2 that posed the initial puzzle. The crucial contrast in need of explanation is repeated in (40). Scrambling gives rise to a secondary-SCO effect (40a), but not to a secondary-WCO effect (40b). That is, binding of the pronoun is possible only if the pronoun does not c-command the launching site of scrambling.

(40) a. 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.'
= (12)

b. … 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.'
= (11)

As noted in section 4.1, the grammaticality contrast in (40) is clearly analogous to Condition C connectivity, which likewise arises only if a coindexed pronoun c-commands the launching site. We therefore analyze (40a) 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 (40a) is then analogous to that of (33). The early-merge derivation of (40a) is given in (41). Because *har laṛke-kii* 'every boy-GEN' is subject to Condition C, (41) violates Condition C.

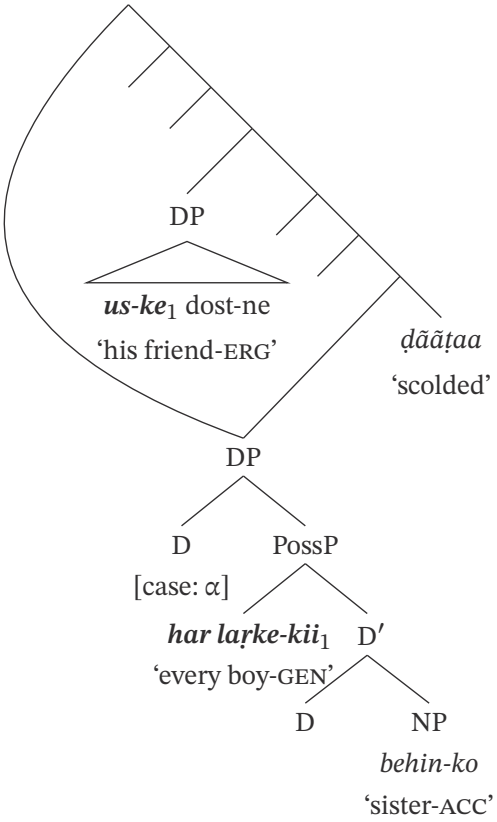
(41) Scrambling in (40a) without DP late merge → Condition C violation



As with (33), an alternative derivation in which the DP layer and the possessor DP are late merged (not shown here; see (39) for (33)) violates the DP Case Filter (30).

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 (40b), Condition C is not violated:

(42) Structure of (40b) → 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 the difference between SCO and WCO in Hindi scrambling but also explains why SCO travels with Condition C connectivity across movement types.

5.3 Late merge of adjuncts

The analysis we propose here attributes the same late-merge options to Hindi scrambling as to English Ā-movement, derived from the fact that both do not feed case

assignment. Given that late merge of adjuncts is possible for English Ā-movement (section 4.2), we expect that scrambling patterns the same way. This expectation is borne out. Like English Ā-movement, Hindi scrambling obviates Condition C violations with relative clauses:

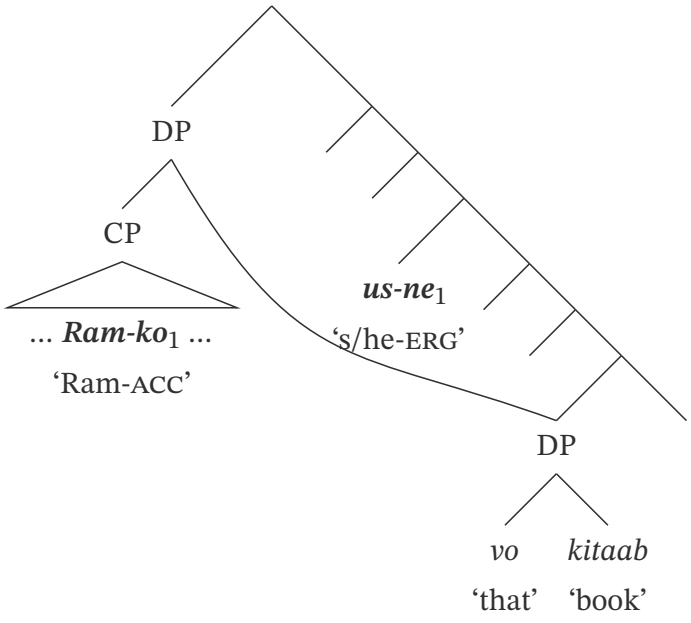
(43) No Condition C connectivity with relative clauses

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

The account of (43) is analogous to the treatment of English relative clauses in (32): the relative clause can late merge onto the DP, resulting in (44). This structure obeys both the Case Filter and Condition C. As before, for typographic reasons (44) does not represent the linear order.

(44) External remerge of relative clause in (43) → 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, as in (45a), rather than the other way around, as in (45b).

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

b. **Sita-ne kal* [$_{DP}$ *kitaab* [$_{CP}$ *jo Ram-ko pasand thii*]]-***ko***
Sita-ERG yesterday book REL Ram-DAT like AUX -ACC
bec diyaa.
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 (45) does not reflect its syntactic position. But to the extent that it does, the ordering in (45a) indicates that relative clauses are merged above the locus of case (D, on our account). It is this high attachment site that enables the external-remerge derivation in (44).

Finally, given that adjuncts may merge late, it is crucial for our account that possessors are not adjuncts. This view is entirely standard. While possessors are typically not arguments of the head noun, they are introduced as specifiers (and hence arguments) of a functional projection (Abney 1987). See Safir 1999 for an argument that possessors are not adjuncts in English. Thus, possessor DPs cannot be late merged because they are arguments of PossP; PossP in turn cannot be late merged because it is not an adjunct but a projection in the nominal spine. In combination with the fact that they are generated below D, this derives the fact that possessors do not have access to a late-merge derivation with scrambling.

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 (46) 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 (in (46), the subject).

(46) 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 it may not do so if the reciprocal pronoun is itself the subject (A. Kidwai 2000: 5, Bhatt 2016: 515, fn. 4). That is, we observe contrasts like (47). In (47a), 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 (47b), 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).

(47) 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).'

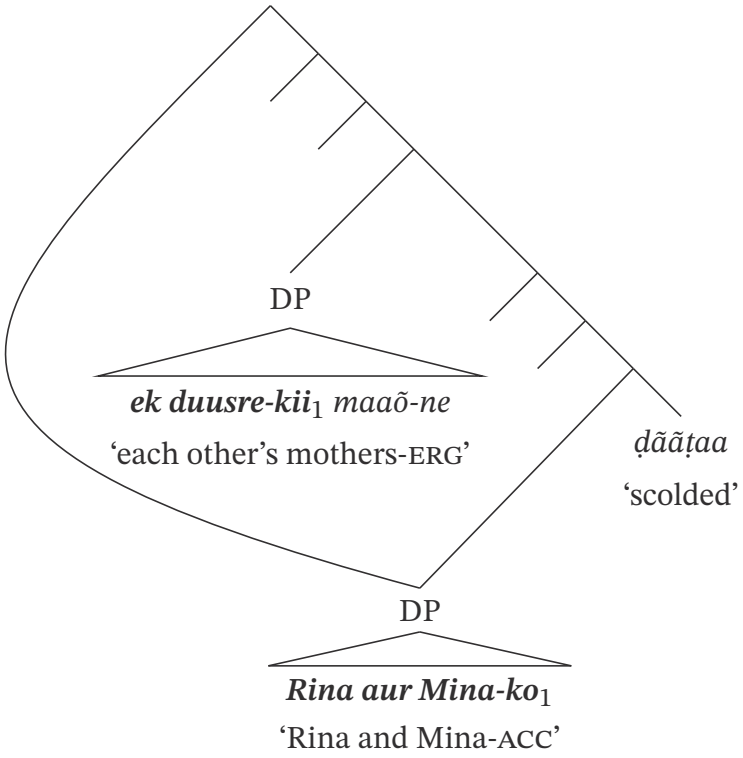
b. *[***Rina aur Mina***]-***ko***$_1$ ***ek duusre-ne***$_1$ ___$_1$ *ḍããṭaa.*
Rina and Mina-ACC each other-ERG scolded
Intended: 'Rina and Mina$_1$, each other$_1$ scolded (them).'

Conflicting conclusions have been drawn from the data points in (47). On the one hand, Bhatt & Dayal 2007 and Bhatt 2016 conclude from (47a) that scrambling lands in an A-position, which enables binding. On the other hand, A. Kidwai 2000 concludes

from (47b) 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 (47), simply because the landing site is the same in (47a) and (47b).

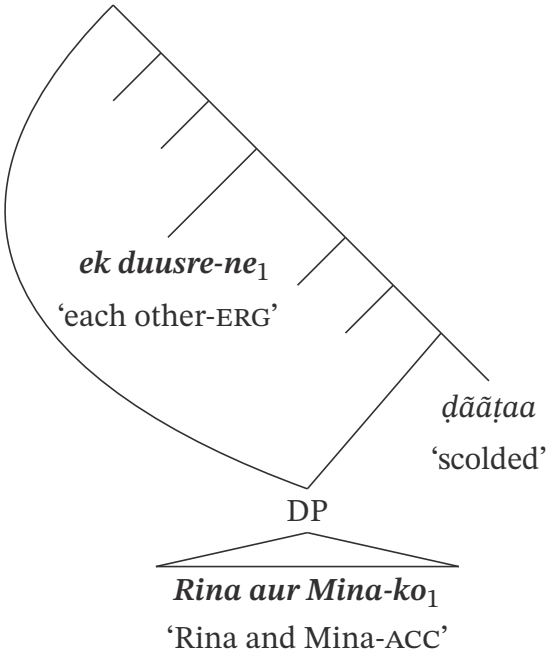
We propose instead that the contrast in (47) follows from the properties of the launching site, as a Condition C effect. The structure for the grammatical baseline case (47a) is given in (48). Because, by assumption, scrambling targets an A-position, the scrambled object may bind the reciprocal pronoun inside the subject (Bhatt & Dayal 2007, Bhatt 2016, Keine 2018).

(48) Structure of (47a) → no Condition C violation



The structure for the ungrammatical (47b) is provided in (49). Here, the reciprocal pronoun c-commands the launching site, inducing a Condition C effect.

(49) Scrambling in (47b) → Condition C violation



Our analysis of SCO in Hindi thus extends to the reciprocal contrast in (47). The resulting account offers, then, 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

The traditional Chomsky 1981 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 in that we do not assume that such movement leaves behind a special silent element. Instead, Condition C connectivity arises with respect to 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 in section 4.2 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.

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.[12] On a trace-based approach, the movement should still leave behind a variable and hence display Condition C effects with respect 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 (50) shows, this prediction is borne out. The baseline structure in (50a) shows that in this construction the matrix subject may corefer with a pronoun inside the nonfinite clause but not with an R-expression—a standard Condition C effect. Scrambling of the object does not alter the coindexation options, as (50b, c) show.

(50) 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 (50c) but not in (50b) is quite puzzling on a trace-based account of Condition C connectivity (as noted by Barss 1988 and Büring 2005; see footnote 12). Because both (50b) and (50c) involve scrambling, the trace left behind would be identical. If the trace is subject to Condition C, the

[12] We thank David Pesetsky for making us aware of this prediction and for very helpful discussion. As a reviewer points out, Barss 1988 observes similar facts for English, illustrated in (i). Büring 2005:174 makes an analogous observation for topicalization in Danish.

(i) a. *Himself*$_1$, *he*$_1$ *respects* ___$_1$.
b. **John*$_1$, *he*$_1$ *respects* ___$_1$.
c. **Him*$_1$, *he*$_1$ *respects* ___$_1$.

Like in Hindi, the moving element conditions whether coindexation is permitted. As both Barss and Büring note, an approach that simply treats traces of Ā-movement as subject to Condition C fails to account for these contrasts. The account we propose here extends to the contrasts in (i).

coindexed pronoun *us-ne* 'he-ERG' should in both cases result in a Condition C violation and hence ungrammaticality; 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, as schematized in (51), it is subject to Condition C only if the moving element is an R-expression.

(51) a. Copy-theoretic structure of (50b)
'he-ACC'$_1$ … **'he-ERG'**$_1$ … ⟨**'he-ACC'**$_1$⟩ … → no Condition C effect
b. Copy-theoretic structure of (50c)
*'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 the contrast between (50b) and (50c) 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 case assignment should make scrambling behave like English A-movement in these respects. Striking support for this conclusion is presented with respect to Condition C in Gong 2022 and 2025 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 arguably precedes 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 animate proper names must bear differential object marking if they are the object of a transitive verb, as shown in (52). Nominative case (i.e., a bare proper name) is impossible. We will follow Butt & King 2004, Bhatt 2005, Keine & Müller 2015, Mahajan 2017, S. Kidwai 2022, Baker 2024, and others in assuming that differential object marking is accusative case in Hindi (also see Baker & Vinokurova 2010 and Baker 2015 for analyses of differential object marking as accusative case in other languages). The example in (52) then shows that an animate-proper-name object of a transitive verb must receive accusative case in Hindi and cannot receive nominative case.[13]

(52) 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 (Bhatt 2007, S. Kidwai 2022):

(53) 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.'

[13] 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 these elements receive case from unaccusative v, which, however, may 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.

If the passive configuration in (53) is placed into a nonfinite clause, nominative case is no longer licensed, and accusative case is required:

(54) 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 (54), the impossibility of *Ram* 'Ram.NOM' in (54) 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 (54). 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 prediction is not trivial, however, because nominative case is normally assigned to the external argument of a transitive verb or to the internal argument of an unaccusative verb. These are 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 seems to have the required properties.

The configuration that we will employ to assess the prediction involves small-clause constructions such as (55). 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.'

(55) *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 (55). Correspondingly, if this same configuration appears in a nonfinite clause, nominative-case DPs are no longer permitted:

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

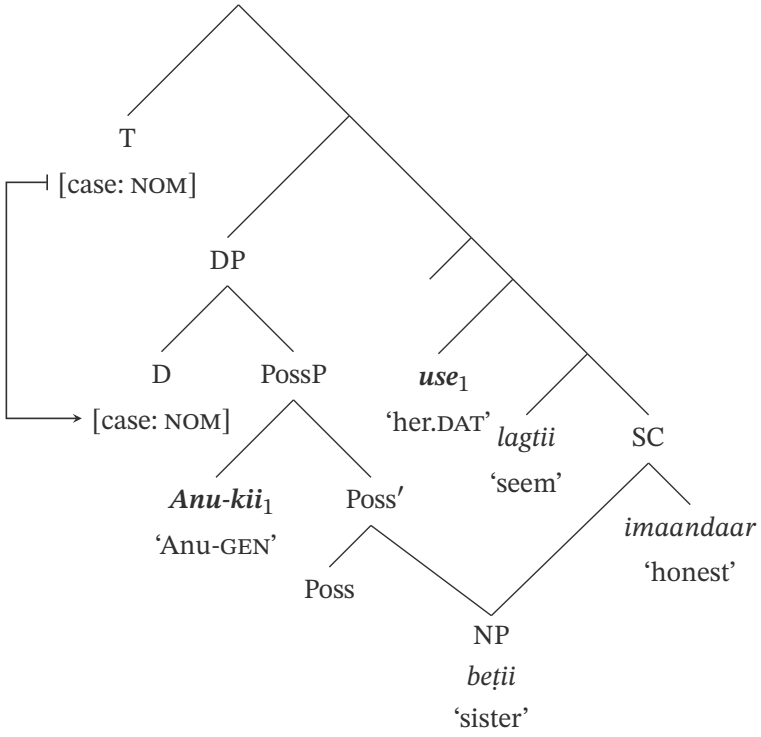
This small-clause construction thus has a useful constellation of properties. The nominative DP receives case from finite T, and a matrix experiencer DP may intervene between the nominative DP and finite T. This opens up the possibility of scrambling the to-be-nominative DP over the experiencer DP, *before* 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 should not display SCO or Condition C connectivity.

We first demonstrate the absence of Condition C connectivity. In (57) 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)). We take (57) to involve scrambling of *Anu-kii beṭii* 'Anu's sister' rather than English-style A-movement to subject position because (i) this movement is not obligatory and instead exhibits the general optionality characteristic of scrambling (see (55)) and (ii) there is not much clear-cut evidence for obligatory A-movement to a subject position in Hindi.

(57) 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 shown in (58). 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.

(58) Derivation of (57) with late merge of PossP and DP



Next, we turn to SCO. We observe first that animate quantificational DPs, just like proper names, require nominative case from T in the constructions discussed above. They may be nominative as the subject of a finite passive clause, like in (59), but not as the subject of a nonfinite clause, as (60, 61) show.

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

(60) *[***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.'

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

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

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

But strikingly, there is also no secondary SCO:

(63) 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 (63) is analogous to that of (57): the DP layer and the possessor *har laṛkii-kii* 'every girl's' may be added late, respecting Condition C.

The Hindi 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 Ā-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 characteristics of scrambling (in particular, its usual ordering relative to case), which may not hold in certain specific configurations.

The data demonstrate that even Hindi scrambling can be made to obviate Condition C effects with possessors under the right circumstances. This provides particularly clear evidence that the baseline contrast between English A-movement and Hindi scrambling is neither a simple difference between English and Hindi nor

between A-movement and scrambling. Our findings also converge with Gong 2022 and 2025's results for Mongolian: in Mongolian, movement that does not feed case assignment shows 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 article was that Hindi scrambling displays an asymmetry with respect to WCO and SCO. Scrambling is not subject to (secondary) WCO, but it is subject to (secondary) 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 Ā-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 2022's external-remerge account of (anti)reconstruction effects (which itself builds on Takahashi 2006, Takahashi & Hulsey 2009, and, ultimately, Lebeaux 1988 and 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 Ā-movement), the launching site must contain the full DP structure of the moving element, resulting in Condition C connectivity and SCO with respect to possessors.

The relevant aspects of our analysis are summarized in (64).

(64) Summary

	English A-movement	Hindi scrambling before case	Hindi scrambling after case	English Ā-movement
Type of landing site	A	A	A	Ā
(Secondary) WCO	No	No (62)	No (11)	Yes
(Secondary) SCO	No	No (63)	Yes (12)	Yes
Condition C connectivity with possessors	No	No (57)	Yes (20b)	Yes
Feeds case?	Yes	Yes	No	No

In a nutshell, Hindi scrambling patterns like English A-movement with respect to its landing site (an A-position), but it typically patterns like English Ā-movement with respect to its launching site (which is case marked). 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 decompose them, in particular—for the cases discussed here—into properties of the landing site (A- vs. Ā-position) and properties of the launching site (case assignment). As we saw, a decompositional view naturally extends to instances of scrambling that differ with respect to SCO and Condition C connectivity.

These results also inform debates about the nature of Hindi scrambling with respect to the A–Ā 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 Ā-movement (in line with, e.g., Webelhuth 1989, Webelhuth 1992, and Dayal 1994 and contra Mahajan 1990 and Mahajan 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 1990 and 1994's overall

conclusion). By decomposing the overall properties of a movement type with respect to crossover and Condition C into properties of the landing site and properties of the launching site, the "mixed" behavior of scrambling with respect to 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 Ā-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 with respect to crossover effects and Condition C connectivity. This typology is given in the following table.

(65) 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
	Ā-position	???	English Ā-movement

In principle, the account permits a fourth type of movement: one that targets an Ā-position but may feed case assignment (the "???" cell in (65)). The model predicts that such a movement type cannot 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 2022 (also see Fong 2019). Gong shows that while for some speakers such scrambling can feed reciprocal binding, for others it cannot. That is, there is a split between speakers as to whether (66b) permits binding of the reciprocal *bie bieniikh in* by the scrambled DP *ter khoyor-ig* 'those two.'

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

b. %***Ter khoyor-ig***$_1$ [***bie bieniikh in***$_1$ *bagš*] [$_{CP}$ *Bat-ig önöödör*
that two-ACC each other's teacher Bat-ACC today
khural deer ___$_1$ *šüümjil-sen gej*] *khel-sen.*
meeting on criticize-PST COMP say-PST
'Those two$_1$, each other's$_1$ teacher said that Bat criticized at the meeting today.'
(Gong 2022: 95, (148))

Importantly, long scrambling in Mongolian obviates Condition C violations:

(67) 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 COMP 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*]
Bat-GEN mother-ACC I him-DAT good person COMP
khel-sen.
say-PST
'Bat's$_1$ mother, I said to him$_1$ is a good person.'
(Gong 2022: 135, (198))

Mia Gong (personal communication) confirms that there are speakers for whom (66b) is ungrammatical but (67b) is grammatical. This pattern of judgments could then be analyzed as scrambling that targets an Ā-position (thus preventing binding) but that nonetheless feeds case assignment (see Gong 2022 and 2025 for arguments that this scrambling feeds case assignment). 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 (65).[14] Nonetheless, there is at least some indication that the full typology in (65) might be borne out, 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 2006's, Takahashi & Hulsey 2009's, and Thoms & Heycock 2022's systems. As we emphasized throughout, one important property of Thoms & Heycock's late-merge account (shared by Takahashi & Hulsey's wholesale-late-merge account) is that the availability of late merge is not conditioned directly by the A–Ā distinction (that is, the nature of the landing site) but rather by case. For prototypical A- and Ā-movement of the English type, there is a correlation between the A–Ā nature of the landing site and whether the element bears case before the movement takes place, but Takahashi & Hulsey and Thoms & Heycock point out that, even in English, this correlation does not always hold. They in particular draw attention to surprising Condition C obviation in some instances of English Ā-movement. Thoms & Heycock provide the headed-relative example in (68), 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 Ā-movement (Chomsky 1977).

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

---

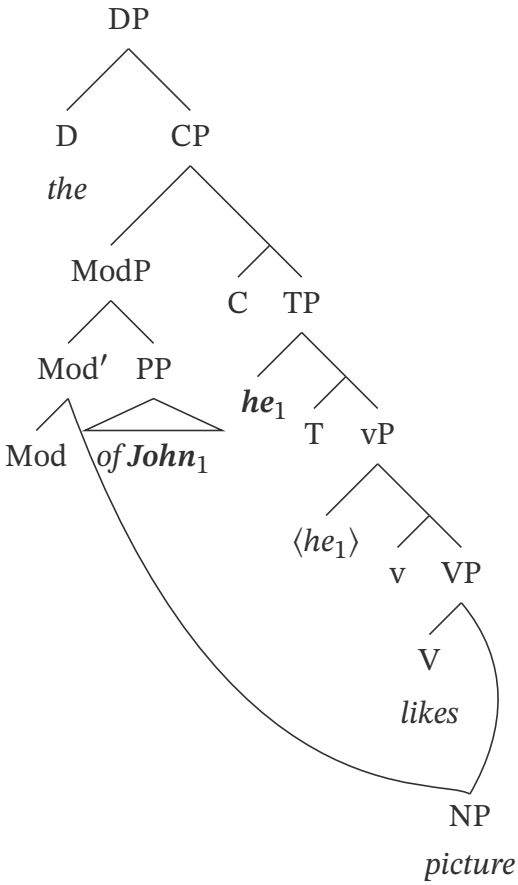
[14] Particularly problematic for any approach that attempts to analyze the Mongolian pattern as instantiating the "???" cell in (65) is the fact that replacing the reciprocal pronoun in (66) with a reflexive pronoun improves binding:

(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 COMP 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* ___$_1$
patient every-ACC self-GEN 3SG.POSS wife 3SG.POSS this doctor-ACC last year
awar-san gej] *khel-sen.*
save-PST COMP say-PST
'Every patient$_1$, his$_1$ (own) wife said that this doctor saved last year.'
(Gong 2022: 94, (147))

See Thoms & Heycock 2022 for arguments that the matching analysis of relative clauses does not provide a comprehensive solution to antireconstruction in relative clauses such as (68). Similar effects can also be found in free relatives (Citko 2002, Takahashi & Hulsey 2009). Thoms & Heycock analyze (68) in terms of DP late merge, with the following relative-clause structure.

(69) Thoms & Heycock's DP-late-merge structure of (68)



(Thoms & Heycock 2022: 166)

Assuming a head-raising analysis, the crucial fact in (69) 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 Ā-movement *without* violating the DP Case Filter. Because DP late merge is thus permitted, adnominal arguments such as *of John* can be late merged as well, circumventing a Condition C effect. The analysis in (69)

thus provides support for dissociating the A/Ā nature of the landing site from the availability of DP late merge.[15,16]

In addition to providing further evidence that DP late merge does not directly track the A–Ā distinction, our account also treats Hindi scrambling as basically the opposite constellation of properties from the headed relative in (68). In (68), the movement targets an Ā-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 following typology.

(70) Types of landing site vis-à-vis DP late merge

		DP late merge possible?	
		Yes	No
Type of landing site	A	English A-movement	Hindi scrambling
	Ā	Headed relatives	"Standard" Ā-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 headed relatives like (68) and Hindi scrambling.

[15] A reviewer notes that this account relies on a head-internal structure for relative clauses whereas our account of the absence of Condition C connectivity with relative clauses in Hindi relied on a head-external structure (see (32)). The two claims are not in conflict. The literature on relative clauses has argued independently that relative clauses may in principle have either a head-internal or head-external parse (see Sauerland 1998, Bhatt 2002, Hulsey & Sauerland 2006, and Sichel 2018 for arguments that relative clauses may have both a head-internal and a head-external or matching structure). The availability of a head-internal structure permits (69); the availability of a head-external structure permits (32).

[16] Interesting questions also arise for 'wager'-verb constructions, which have been analyzed as Ā-movement feeding case assignment (e.g., Kayne 1984, Ura 1993, Bošković 1997, and Rizzi 1982 for Italian), which is, however, controversial (Postal 1993b, Ito 2014). Even if these constructions involve Ā-movement that feeds case assignment, it is typically the embedded Ā-movement step that does so. Because this movement step does not cross another DP, it is impossible to assess Condition C connectivity, and our account still predicts Condition C effects with respect to DPs higher than the embedded Ā-movement step.

Supplementary material

A file containing appendix A and appendix B can be downloaded at https://doi.org/10.16995/star.17646.s1.

Acknowledgments

For helpful discussions, feedback, and data, we thank three reviewers, Dylan Bumford, Simon Charlow, Gennaro Chierchia, Veneeta Dayal, Ashwini Deo, Danny Fox, Mia Gong, Bilge Palaz, David Pesetsky, Ethan Poole, Hayley Ross, Ken Safir, Martin Salzmann, Giorgos Spathas, Gary Thoms, and Ede Zimmermann, as well as audiences at Formal Approaches to South Asian Languages 8 (Wichita State University); the 49th annual meeting of the North East Linguistic Society (Cornell University); the Syracuse–Cornell Workshop on Word Order and Scrambling; the University of Leipzig; the Massachusetts Institute of Technology; Rutgers University; the International Christian University in Tokyo; the University of California, Los Angeles; and the Linguistic Society of Germany's 2024 summer school at the University of Göttingen.

Competing interests

The authors declare that they have no competing interests.

References

Abney, Steven. 1987. *The English noun phrase in its sentential aspect*. Doctoral thesis. Massachusetts Institute of Technology.

Adger, David. 2013. *A syntax of substance*. MIT Press.

Alexiadou, Artemis. 2014. Roots don't take complements. *Theoretical Linguistics* 40.287–297. https://doi.org/10.1515/tl-2014-0012.

Alok, Deepak. 2016. The syntax of split: the case of Hindi and Magahi. In: Menon, Mythili & Syed, Saurov (editors). *Proceedings of FASAL 6*. University of Konstanz. 53–61. https://ojs.ub.uni-konstanz.de/jsal/index.php/fasal/article/view/103/0.

Bach, Emmon & Cooper, Robin. 1978. The NP-S analysis of relative clauses and compositional semantics. *Linguistics and Philosophy* 2.145–150. https://doi.org/10.1007/BF00365132.

Baker, Mark. 2015. *Case: its principles and its parameters*. Cambridge University Press. https://doi.org/10.1017/CBO9781107295186.

Baker, Mark. 2024. On dependent case and the sometimes independence of ergativity and differential object marking. In: Sevdali, Christina & Mertyris, Dionysios & Anagnostopoulou, Elena (editors). *On the place of case in the grammar*. Oxford University Press. 25–50. https://doi.org/10.1093/oso/9780198865926.003.0002.

Baker, Mark & Vinokurova, Nadya. 2010. Two modalities of case assignment: case in Sakha. *Natural Language and Linguistic Theory* 28.593–642. https://doi.org/10.1007/s11049-010-9105-1.

Barker, Chris. 2012. Quantificational binding does not require c-command. *Linguistic Inquiry* 43.614–633. https://doi.org/10.1162/ling_a_00108.

Barker, Chris & Shan, Chung-Chieh. 2014. *Continuations in natural language*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199575015.001.0001.

Barss, Andrew. 1988. Paths, connectivity, and featureless empty categories. In: Cardinaletti, Anna & Cinque, Guglielmo & Giusti, Giuliana (editors). *Constituent structure*. Foris Publications. 9–34.

Bhatia, Sakshi & Bhatt, Rajesh. 2023. Copular agreement in Hindi-Urdu. *Glossa* 8. https://doi.org/10.16995/glossa.5777.

Bhatt, Rajesh. 2002. The raising analysis of relative clauses: evidence from adjectival modification. *Natural Language Semantics* 10.43–90. https://doi.org/10.1023/A:1015536226396.

Bhatt, Rajesh. 2005. Long distance agreement in Hindi-Urdu. *Natural Language and Linguistic Theory* 23.757–807. https://doi.org/10.1007/s11049-004-4136-0.

Bhatt, Rajesh. 2007. Unaccusativity and case licensing. Handout of talk at McGill University.

Bhatt, Rajesh. 2016. Minimalist approaches to South Asian syntax. In: Hock, Hans Henrich & Bashir, Elena (editors). *The languages and linguistics of South Asia: a comprehensive guide*. De Gruyter. 506–529.

Bhatt, Rajesh & Dayal, Veneeta. 2007. Rightward scrambling as rightward remnant movement. *Linguistic Inquiry* 38.287–301. https://doi.org/10.1162/ling.2007.38.2.287.

Bhatt, Rajesh & Pancheva, Roumyana. 2004. Late merger of degree clauses. *Linguistic Inquiry* 35.1–45. https://doi.org/10.1162/002438904322793338.

Borer, Hagit. 2005. *In name only*. Volume 1 of *Structuring sense*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199263905.001.0001.

Bošković, Željko. 1997. *The syntax of nonfinite complementation: an economy approach*. MIT Press.

Browning, Marguerite & Karimi, Ezat. 1994. Scrambling to object position in Persian. In: Corver, Norbert & van Riemsdijk, Henk (editors). *Studies on scrambling: movement and non-movement approaches to free word-order phenomena*. De Gruyter. 61–100. https://doi.org/10.1515/9783110857214.61.

Bumford, Dylan & Charlow, Simon. 2022. Dynamic semantics with static types. Unpublished paper. Work conducted at University of California, Los Angeles and New York University. https://ling.auf.net/lingbuzz/006884.

Büring, Daniel. 2004. Crossover situations. *Natural Language Semantics* 12.23–62. https://doi.org/10.1023/B:NALS.0000011144.81075.a8.

Büring, Daniel. 2005. *Binding theory*. Cambridge University Press. https://doi.org/10.1017/CBO9780511802669.

Butt, Miriam & King, Tracy Holloway. 2004. The status of case. In: Dayal, Veneeta & Mahajan, Anoop (editors). *Clause structure in South Asian languages*. Kluwer Academic Publishers. 153–198. https://doi.org/10.1007/978-1-4020-2719-2_6.

Charlow, Simon. 2020. The scope of alternatives: indefiniteness and islands. *Linguistics and Philosophy* 43.427–472. https://doi.org/10.1007/s10988-019-09278-3.

Chierchia, Gennaro. 2020. Origins of weak crossover: when dynamic semantics meets event semantics. *Natural Language Semantics* 28.23–76. https://doi.org/10.1007/s11050-019-09158-3.

Chierchia, Gennaro. 2023. Movement and crossover in three languages. Unpublished paper. Work conducted at Harvard University.

Chomsky, Noam. 1977. On wh-movement. In: Culicover, Peter & Wasow, Thomas & Akmajian, Adrian (editors). *Formal syntax*. Academic Press. 71–132.

Chomsky, Noam. 1981. *Lectures on government and binding*. Foris Publications. https://doi.org/10.1515/9783110884166.

Chomsky, Noam. 1993. A minimalist program for linguistic theory. In: Hale, Ken & Keyser, Samuel Jay (editors). *The view from Building 20: essays in linguistics in honor of Sylvain Bromberger*. MIT Press. 1–52.

Chomsky, Noam. 1995. *The Minimalist Program*. MIT Press.

Chomsky, Noam. 2004. Beyond explanatory adequacy. In: Belletti, Adriana (editor). *Structures and beyond*, volume 3 of *The cartography of syntactic structures*. Oxford University Press. 104–131. https://doi.org/10.1093/oso/9780195171976.003.0004.

Citko, Barbara. 2002. (Anti)reconstruction effects in free relatives: a new argument against the Comp account. *Linguistic Inquiry* 33.507–511. https://doi.org/10.1162/002438902760168590.

Citko, Barbara. 2005. On the nature of Merge: External Merge, Internal Merge, and Parallel Merge. *Linguistic Inquiry* 36.475–496. https://doi.org/10.1162/002438905774464331.

Citko, Barbara & Gračanin-Yuksek, Martina. 2021. *Merge: binarity in (multidominant) syntax*. MIT Press. https://doi.org/10.7551/mitpress/12800.001.0001.

Dayal, Veneeta Srivastav. 1994. Binding facts in Hindi and the scrambling phenomenon. In: Butt, Miriam & King, Tracy Holloway & Ramchand, Gillian (editors). *Theoretical perspectives on word order in South Asian languages*. CSLI Publications. 237–262.

de Vries, Mark. 2009. On multidominance and linearization. *Biolinguistics* 3.344–403. https://doi.org/10.5964/bioling.8735.

Déprez, Viviane. 1989. *On the typology of syntactic positions and the nature of chains: Move α to the specifier of functional projections*. Doctoral thesis. Massachusetts Institute of Technology.

Evans, Gareth. 1977. Pronouns, quantifiers and relative clauses (I). *Canadian Journal of Philosophy* 7.467–536. https://doi.org/10.1080/00455091.1977.10717030.

Evans, Gareth. 1980. Pronouns. *Linguistic Inquiry* 11.337–362.

Fanselow, Gisbert. 1987. *Konfigurationalität: Untersuchungen zur Universalgrammatik am Beispiel des Deutschen* [Configurationality: investigations into Universal Grammar using German as an example]. Narr.

Fanselow, Gisbert. 1990. Scrambling as NP-movement. In: Grewendorf, Günther & Sternefeld, Wolfgang (editors). *Scrambling and barriers*. John Benjamins Publishing Company. 113–140. https://doi.org/10.1075/la.5.07fan.

Fong, Suzana. 2019. Proper movement through Spec-CP: an argument from hyperraising in Mongolian. *Glossa* 4.30. https://doi.org/10.5334/gjgl.667.

Fox, Danny. 1999. Reconstruction, binding theory, and the interpretation of chains. *Linguistic Inquiry* 30.157–196. https://doi.org/10.1162/002438999554020.

Freidin, Robert. 1986. Fundamental issues in the theory of binding. In: Lust, Barbara (editor). *Studies in the acquisition of anaphora*. D. Reidel Publishing Company. 151–188. https://doi.org/10.1007/978-94-009-4548-7_4.

Freidin, Robert & Lasnik, Howard. 1981. Disjoint reference and *wh*-trace. *Linguistic Inquiry* 12.39–53.

Gong, Zhiyu Mia. 2022. *Issues in the syntax of movement: cross-clausal dependencies, reconstruction, and movement typology*. Doctoral thesis. Cornell University.

Gong, Zhiyu Mia. 2025. Case in wholesale late merger: evidence from Mongolian scrambling. *Linguistic Inquiry* 56.53–95. https://doi.org/10.1162/ling_a_00494.

Grodzinsky, Yosef & Reinhart, Tanya. 1993. The innateness of binding and coreference. *Linguistic Inquiry* 24.69–102.

Gurtu, Madhu. 1992. *Anaphoric relations in Hindi and English*. Munshiram Manoharlal.

Hartman, Jeremy. 2012. (Non-)Intervention in A-movement: some cross-constructional and cross-linguistic consequences. *Linguistic Variation* 11.121–148. https://doi.org/10.1075/lv.11.2.01har.

Higginbotham, James. 1980. Pronouns and bound variables. *Linguistic Inquiry* 11.679–708.

Hulsey, Sarah & Sauerland, Uli. 2006. Sorting out relative clauses. *Natural Language Semantics* 14.111–137. https://doi.org/10.1007/s11050-005-3799-3.

Hunter, Tim. 2015. Deconstructing Merge and Move to make room for adjunction. *Syntax* 18.266–319. https://doi.org/10.1111/synt.12033.

Ito, Yuki. 2014. Raising to object in *wager/assure*-class verbs: a PF account of the defective paradigm. *Studia Linguistica* 68.226–244. https://doi.org/10.1111/stul.12026.

Johnson, Kyle. 2011. Determiners and movement. In: Folli, Raffaella & Ulbrich, Christiane (editors). *Interfaces in linguistics: new research perspectives*. Oxford University Press. 30–55.

Johnson, Kyle. 2012. Towards deriving differences in how *wh* movement and QR are pronounced. *Lingua* 122.529–553. https://doi.org/10.1016/j.lingua.2010.11.010.

Jones, Douglas Arnold. 1993. *Binding as an interface condition: an investigation of Hindi scrambling*. Doctoral thesis. Massachusetts Institute of Technology.

Kayne, Richard. 1984. *Connectedness and binary branching*. Foris Publications. https://doi.org/10.1515/9783111682228.

Kayne, Richard. 1993. Toward a modular theory of auxiliary selection. *Studia Linguistica* 47.3–31. https://doi.org/10.1111/j.1467-9582.1993.tb00837.x.

Kayne, Richard. 2000. *Parameters and universals*. Oxford University Press.

Kayne, Richard. 2005. *Movement and silence*. Oxford University Press.

Keine, Stefan. 2018. Case vs. positions in the locality of A-movement. *Glossa* 3.138. https://doi.org/10.5334/gjgl.520.

Keine, Stefan. 2019. Selective opacity. *Linguistic Inquiry* 50.13–61. https://doi.org/10.1162/ling_a_00299.

Keine, Stefan. 2020. *Probes and their horizons*. MIT Press.

Keine, Stefan & Müller, Gereon. 2015. Differential argument encoding by impoverishment. In: Bornkessel-Schlesewski, Ina & Malchukov, Andrej & Richards, Marc (editors). *Scales and hierarchies: a cross-disciplinary perspective*. De Gruyter. 75–130. https://doi.org/10.1515/9783110344134.75.

Kidwai, Ayesha. 2000. *XP-adjunction in Universal Grammar: scrambling and binding in Hindi-Urdu*. Oxford University Press.

Kidwai, Sana. 2022. The Urdu active impersonal. In: Alam, Samir & Sinha, Yash & Srinivas, Sadhwi (editors). *Proceedings of (F)ASAL 11*. University of Konstanz. 1–19. https://ojs.ub.uni-konstanz.de/jsal/index.php/fasal/article/view/237.

Kobele, Gregory. 2010. Inverse linking via function composition. *Natural Language Semantics* 18.183–196. https://doi.org/10.1007/s11050-009-9053-7.

Koopman, Hilda & Sportiche, Dominique. 1983. Variables and the Bijection Principle. *Linguistic Review* 2.139–160. https://doi.org/10.1515/tlir.1982.2.2.139.

Kornfilt, Jaklin & Preminger, Omer. 2015. Nominative as *no case at all*: an argument from raising-to-accusative in Sakha. In: Joseph, Andrew & Predolac, Esra (editors). *Proceedings of the 9th Workshop on Altaic Formal Linguistics (WAFL 9)*. MIT Working Papers in Linguistics. 109-–120.

Lasnik, Howard & Funakoshi, Kenshi. 2017. Condition C violations and strong crossover. In: Everaert, Martin & van Riemsdijk, Henk (editors). *The Wiley Blackwell companion to syntax*, second edition. John Wiley and Sons. 2.1052–1078. https://doi.org/10.1002/9781118358733.wbsyncom021.

Lasnik, Howard & Stowell, Tim. 1991. Weakest crossover. *Linguistic Inquiry* 22. 687–720.

Lebeaux, David. 1988. *Language acquisition and the form of the grammar*. Doctoral thesis. University of Massachusetts Amherst.

Lebeaux, David. 2000. *Language acquisition and the form of the grammar*. John Benjamins Publishing Company. https://doi.org/10.1075/z.97.

Lebeaux, David. 2009. *Where does binding theory apply?* MIT Press.

Levin, Theodore. 2015. *Licensing without Case*. Doctoral thesis. Massachusetts Institute of Technology.

Levin, Theodore & Preminger, Omer. 2015. Case in Sakha: are two modalities really necessary? *Natural Language and Linguistic Theory* 33.231–250. https://doi.org/10.1007/s11049-014-9250-z.

Lohndal, Terje. 2012. *Without specifiers: phrase structure and events*. Doctoral thesis. University of Maryland.

Mahajan, Anoop. 1990. *The A/A-bar distinction and movement theory*. Doctoral thesis. Massachusetts Institute of Technology.

Mahajan, Anoop. 1994. Towards a unified theory of scrambling. In: Corver, Norbert & van Riemsdijk, Henk (editors). *Studies on scrambling: movement and non-movement approaches to free word-order phenomena*. De Gruyter. 301–330. https://doi.org/10.1515/9783110857214.301.

Mahajan, Anoop. 2017. Accusative and ergative in Hindi. In: Coon, Jessica & Massam, Diane & Travis, Lisa (editors). *The Oxford handbook of ergativity*. Oxford University Press. 86–108. https://doi.org/10.1093/oxfordhb/9780198739371.013.4.

Marantz, Alec. 1991. Case and licensing. In: Westphal, German & Ao, Benjamin & Chae, Hee-Rahk (editors). *Proceedings of the 8th Eastern States Conference on Linguistics (ESCOL 8)*. CLC Publications. 234–253.

May, Robert. 1977. *The grammar of quantification*. Doctoral thesis. Massachusetts Institute of Technology.

May, Robert & Bale, Alan. 2006. Inverse linking. In: Everaert, Martin & van Riemsdijk, Henk (editors). *The Blackwell companion to syntax*. Blackwell Publishing. 2.639–667. https://doi.org/10.1002/9781118358733.wbsyncom078.

Moulton, Keir. 2009. *Natural selection and the syntax of clausal complementation*. Doctoral thesis. University of Massachusetts Amherst.

Müller, Gereon. 1995. *A-bar syntax: a study in movement types*. De Gruyter. https://doi.org/10.1515/9783110814286.

Müller, Gereon & Sternefeld, Wolfgang. 1993. Improper movement and unambiguous binding. *Linguistic Inquiry* 24.461–507.

Müller, Gereon & Sternefeld, Wolfgang. 1994. Scrambling as A-bar movement. In: Corver, Norbert & van Riemsdijk, Henk (editors). *Studies on scrambling*. Mouton de Gruyter. 331–385. https://doi.org/10.1515/9783110857214.331.

Nunes, Jairo. 1995. *The copy theory of movement and linearization of chains in the Minimalist Program*. Doctoral thesis. University of Maryland.

Nunes, Jairo. 2004. *Linearization of chains and sideward movement*. MIT Press.

Pesetsky, David. 1995. *Zero syntax: experiencers and cascades*. MIT Press.

Poole, Ethan. 2017. *Movement and the semantic type of traces*. Doctoral thesis. University of Massachusetts Amherst.

Poole, Ethan & Keine, Stefan. 2024. Not all reconstruction effects are syntactic. *Natural Language and Linguistic Theory* 42.1677–1725. https://doi.org/10.1007/s11049-023-09603-3.

Postal, Paul. 1971. *Cross-over phenomena*. Holt, Rinehart and Winston.

Postal, Paul. 1993a. Remarks on weak crossover effects. *Linguistic Inquiry* 24.539–556.

Postal, Paul. 1993b. Some defective paradigms. *Linguistic Inquiry* 24.347–364.

Preminger, Omer. 2011. *Agreement as a fallible operation*. Doctoral thesis. Massachusetts Institute of Technology.

Preminger, Omer. 2014. *Agreement and its failures*. MIT Press.

Preminger, Omer. 2024. Taxonomies of case and ontologies of case. In: Sevdali, Christina & Mertyris, Dionysios & Anagnostopoulou, Elena (editors). *The place of case in grammar*. Oxford University Press. 73–92. https://doi.org/10.1093/oso/9780198865926.003.0004.

Reinhart, Tanya. 1983. Coreference and bound anaphora: a restatement of the anaphora questions. *Linguistics and Philosophy* 6.47–88. https://doi.org/10.1007/BF00868090.

Reinhart, Tanya & Reuland, Eric. 1993. Reflexivity. *Linguistic Inquiry* 24.657–720.

Rizzi, Luigi. 1982. *Issues in Italian syntax*. Foris Publications. https://doi.org/10.1515/9783110883718.

Ross, Hayley & Chierchia, Gennaro & Davidson, Kathryn. 2023. Quantifying weak and strong crossover for wh-crossover and proper names. In: Onoeva, Maria & Staňková, Anna & Šimík, Radek (editors). *Proceedings of Sinn und Bedeutung 27*. Charles University. 535–553.

Ruys, Eddy. 2000. Weak crossover as a scope phenomenon. *Linguistic Inquiry* 31.513–539. https://doi.org/10.1162/002438900554424.

Safir, Ken. 1984. Multiple variable binding. *Linguistic Inquiry* 15.603–638.

Safir, Ken. 1999. Vehicle change and reconstruction in Ā-chains. *Linguistic Inquiry* 30.587–620. https://doi.org/10.1162/002438999554228.

Safir, Ken. 2004. *The syntax of (in)dependence*. MIT Press.

Safir, Ken. 2017. Weak crossover. In: Everaert, Martin & van Riemsdjik, Henk (editors). *The Wiley Blackwell companion to syntax*, second edition. John Wiley and Sons. 8.4939–4979. https://doi.org/10.1002/9781118358733.wbsyncom090.

Safir, Ken. 2019. The A/Ā distinction as an epiphenomenon. *Linguistic Inquiry* 50.285–336. https://doi.org/10.1162/ling_a_00305.

Saito, Mamoru. 1985. *Some asymmetries in Japanese and their theoretical implications*. Doctoral thesis. Massachusetts Institute of Technology.

Saito, Mamoru. 1989. Scrambling as semantically vacuous A′-movement. In: Baltin, Mark & Kroch, Anthony (editors). *Alternative conceptions of phrase structure*. University of Chicago Press. 182–200.

Sauerland, Uli. 1998. *On the making and meaning of chains*. Doctoral thesis. Massachusetts Institute of Technology.

Sauerland, Uli. 2004. The interpretation of traces. *Natural Language Semantics* 12.63–127. https://doi.org/10.1023/B:NALS.0000011201.91994.4f.

Sichel, Ivy. 2018. Anatomy of a counterexample: extraction from relative clauses. *Linguistic Inquiry* 49.335–378. https://doi.org/10.1162/LING_a_00275.

Sportiche, Dominique. 2005. Division of labor between Merge and Move: strict locality of selection and apparent reconstruction paradoxes. In: Klinedinst, Nathan & Kobele, Gregory (editors). *Proceedings of "Division of Linguistic Labor" (the La Bretesche workshop)*. University of California, Los Angeles. 206–285. https://ling.auf.net/lingbuzz/000163.

Stanton, Juliet. 2016. Wholesale late merger in Ā-movement: evidence from preposition stranding. *Linguistic Inquiry* 47.89–126. https://doi.org/10.1162/LING_a_00205.

Szabolcsi, Anna. 1983. The possessor that ran away from home. *Linguistic Review* 3.89–102. https://doi.org/10.1515/tlir.1983.3.1.89.

Takahashi, Shoichi. 2006. *Decompositionality and identity*. Doctoral thesis. Massachusetts Institute of Technology.

Takahashi, Shoichi & Hulsey, Sarah. 2009. Wholesale late merger: beyond the A/Ā distinction. *Linguistic Inquiry* 40.387–426. https://doi.org/10.1162/ling.2009.40.3.387.

Thoms, Gary. 2019. Antireconstruction as layering. In: Baird, Maggie & Pesetsky, Jonathan (editors). *NELS 49: proceedings of the 49th meeting of the North East Linguistic Society*. Graduate Linguistics Student Association, University of Massachusetts Amherst. 3.221–230.

Thoms, Gary & Heycock, Caroline. 2022. Deriving "late merge" with External Remerge. In: Bakay, Özge & Pratley, Breanna & Neu, Eva & Deal, Peyton (editors). *NELS 52: proceedings of the 52nd meeting of the North East Linguistic Society*. Graduate Linguistics Student Association, University of Massachusetts Amherst. 3.159–172.

Ura, Hiroyuki. 1993. On feature-checking for *wh*-traces. In: Phillips, Colin (editor). *Papers on case and agreement II*. MIT Working Papers in Linguistics. 377–399.

van Riemsdijk, Henk & Williams, Edwin. 1981. NP-structure. *Linguistic Review* 1.171–218. https://doi.org/10.1515/tlir.1981.1.2.171.

van Urk, Coppe. 2015. *A uniform syntax for phrasal movement: a case study of Dinka Bor*. Doctoral thesis. Massachusetts Institute of Technology.

Wasow, Thomas. 1972. *Anaphoric relations in English*. Doctoral thesis. Massachusetts Institute of Technology.

Webelhuth, Gert. 1989. *Syntactic saturation phenomena and the modern Germanic languages*. Doctoral thesis. University of Massachusetts Amherst.

Webelhuth, Gert. 1992. *Principles and parameters of syntactic saturation*. Oxford University Press.

Williams, Edwin. 2003. *Representation theory*. MIT Press.

Williams, Edwin. 2013. Generative semantics, generative morphosyntax. *Syntax* 16.77–108. https://doi.org/10.1111/j.1467-9612.2012.00173.x.