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Multiple Derivational Pathways to Shared Exponence in Right Edge Sharing

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Abstract

I present evidence from Turkish in favor of reorganizing sharing phenomena at the right edge governed by the Right Edge Restriction, under the name of *Right Edge Sharing*: right node raising, backwards gapping, and suspended affixation. I argue that this consists of minimally two classes: *constituent sharing* which is derived via across-the-board extraposition, and *string sharing* which is derived via parallel merge and multidominant linearization, and propose a post-syntactic multidominance-based linearization process that expands empirical coverage to novel Turkish patterns and derives the Right Edge Restriction in both classes of derivations.

Keywords: right node raising, gapping, suspended affixation, Right Edge Restriction, multidominance, linearization, Turkish

1 Introduction

Shared exponence is an ever-growing set of phenomena, that, due to differences in target material, licensing conditions and domains, linear order, and so forth, are associated with a complicated web of labels, questions, and analyses. In this investigation, I discuss a natural class of shared exponence constructions associated with edges, which I label *Right Edge Sharing*, which unifies *right node raising*, *backwards gapping*, and *suspended affixation*, and argue for a refactoring of these phenomena based on structural configuration and syntactic vs. post-syntactic derivational mechanisms.

Right Edge Sharing is defined as in (1): a structure where multiple positions in non-overlapping constituents are associated with one set of linguistic material; and these positions are governed by a constraint on linear order called an *Edge Restriction*.

- (1) a. *Right Edge Sharing Structure*: A syntactic structure in which one phonologically-overt string of material is associated with structural positions within multiple *non-overlapping* constituents, which is also constrained by the *Right Edge Restriction*.
- b. *Overlapping Constituents*: Constituents X and Y are overlapping iff X contains Y or Y contains X.
- c. *Right Edge Restriction (provisional definition)*: A node α must be rightmost in all the non-rightmost constituents containing it in order to be *shared at the right edge*.¹

See (2)–(6) for examples of the target constructions.

- (2) *English (Right Node Raising)*
I like ___i, Akshay tolerates ___i, and Sami hates [**smoky Scotch whisky**]_i.
- (3) *Turkish (Backward Gapping)*
Ali Londra-ya __, Cem San Fransisko-ya __, Barış=da
Ali London-DAT Cem San.Francisco-DAT Barış=CONTR.TOP
Şikago-ya **git-ti**.
Chicago-DAT go-PAST
'Ali went to London, Cem went to San Francisco, and Barış went to Chicago.'
- (4) *German (Suspended Affixation)* (Wilder, 1997, 83)
Er sucht den Ein-__ und sie sucht den Aus-**gang**.
he seeks the in-__ and she seeks the out-way
'He is looking for the entry and she is looking for the exit.'
- (5) *English (Suspended Affixation)*
a. [His theory under-__], and [her theory over-**generates**].
b. [some [pre-__] __] and [some [post-**modern**] **approaches**]
- (6) *Korean (Suspended Affixation)* (Yoon, 2017, 8)
%Cheli-nun kwunin-__ kuliko Tongswu-nun haksayng-**tap-ta**.
C-TOP soldier __ and T-TOP student-be.like-DECL
'Cheli is every bit a soldier and Tongswu, (every bit) a student.'²

Subsets of Right Edge Sharing phenomena have been received differing approaches: across-the-board extraction (Ross, 1967; Sabbagh, 2007; Clapp, 2008), constituent ellipsis (Ha, 2006; Ince, 2009), in-situ multidominance and linearization (McCawley, 1982; Wilder, 1999; Abels, 2004; Gračanin-Yüksek, 2007; Citko, 2018; Citko and Gračanin-Yüksek, 2021), and PF-deletion (Wexler and Culicover, 1980; Wilder, 1997; Hartmann, 2001; Bošković, 2004; Féry and Hartmann, 2005). Hence, I opt for the descriptive label *Right Edge Sharing* to distance ourselves from specific analytical choices and assumptions.

In this paper, I argue that while the Right Edge Restriction descriptively defines the natural class of Right Edge Sharing structures, but, as argued by growing work within the literature (Barros and Vicente, 2011; Belk et al., 2023), this this class in

¹Modified from Bachrach and Katzir (2017), and will be discussed and developed later in the paper.

²% = speaker variation in acceptability judgment

derivationally heterogeneous. Based on primarily Turkish data, I argue that Right Edge Sharing minimally consists of *constituent sharing* structures and *string sharing* structures derived via two different mechanisms: The former involves across-the-board movement, while the latter is the a result of post-syntactic linearization of parallel-merged elements in-situ.

At a first glance, it would appear that the Right Edge Restriction governing these two constructions should also be heterogeneous due to the different mechanisms involved. However, I argue that a unified formulation of the restriction is possible; I propose a post-syntactic multidominant linearization algorithm that derives the Right Edge Restriction in both types of constructions through the *Asymmetric Sister Linearization Principle*. This process operates on a post-syntactic representation, derives positions of internally merged elements through an operation *branch pruning*, and cyclically linearizes sister nodes. The *asymmetry* refers to the treatment of parallel merged nodes within left and right sisters: the mechanisms linearizes all *completely dominated* nodes within the left sister node as preceding all *dominated* nodes within the right sister node, which derives the Right Edge Restriction and linear order facts for *string sharing* structures, which expone parallel merged nodes in their rightmost position. However, this algorithm also applies to *constituent sharing* structures, where parallel merged nodes are extracted and extraposed to the right through internal merge; assuming multidominance, constituent sharing examples are simply extraction of parallel merged nodes from a coordination, and the *branch pruning* mechanism that derives the surface position of all moved nodes directly applies to these cases in an identical manner.

Section §1.1 discusses the nature of the Right Edge Restriction that constrains Right Edge Sharing, section §2 presents evidence that target patterns in Turkish comprises of constructions with different properties, namely *constituent sharing* and *string sharing* structures, section §3 presents the analyses for the two classes of constructions and develops a linearization algorithm centered around the *Asymmetric Sister Linearization Principle*, and section §3 concludes.

1.1 On the Right Edge Restriction

The most crucial thing for our investigation is the *Right Edge Restriction*, which describes the conditions on word order and structure that govern the grammaticality of *edge sharing*. This restriction is a descriptive constraint that was initially noted in the *right node raising* literature, which states that sharing of phrasal elements at the right edge of a coordination is only grammatical if the *gaps* corresponding to the *pivot* are at the right edge of their respective conjuncts, as in (7), leading to formalizations like (8) (Wilder, 1999; Sabbagh, 2007).

- (7) *Right edge vs. Non-right edge gaps in right node raising* (Wilder, 1999, ex.6)
- a. [I invited into my house ___] and [congratulated **all the winners**]
 - b. *[I gave ___ a present] and [congratulated **all the winners**].
- (8) *Right Edge Restriction (RER)* (Sabbagh, 2007, 356, ex.12)
- In the configuration: [[_A ...X ...] Conj. [_B ...X ...]]
- X must be rightmost within A and B before either (i) X can be deleted from

A; (ii) X can be rightward ATB-moved; or (iii) X can be multiply dominated by A and B.

Some work such as Wilder (1999) and Sabbagh (2007) define the Right Edge Restriction as a constraint on conjunction structures, as in (8), but it has also long been noted that Right Edge Sharing can occur in many non-conjunctive contexts, as in (9) (Hudson, 1976; Postal, 1994; Wilder, 1997; Chaves, 2007; Bachrach and Katzir, 2017).

- (9) *Non-coordination Right Edge Sharing*
- a. People who hate ___ often ridicule people who enjoy **songs by Elton John**. (Bachrach and Katzir, 2017, 5)
 - b. Of the people questioned, those who liked ___ outnumbered by two to one those who disliked **the way in which the devaluation of the pound had been handled**. (Hudson, 1976, 550)
 - c. It's interesting to compare the people who like ___ with the people who dislike **the power of the big unions**. (Hudson, 1976, 550)

Therefore, I adopt Bachrach and Katzir (2017)'s formulation of the Right Edge Restriction in (10) for maximum generalization; it is stated for a node α that is parallel merged within multiple phrases, and thus generalizes non-coordination structures as well.³

- (10) *Right Edge Restriction* (Bachrach and Katzir, 2017, reformatted)
Node α 's position is rightmost in all the non-rightmost constituents containing it, in which case it surfaces within the rightmost constituent.

As we can see above, the Right Edge Restriction is fundamentally a *descriptive* generalization about which linear and structural positions license Right Edge Sharing. But, it has also been shown to robustly restrict Right Edge Sharing structures time and time again, which begs a formal explanation. The more difficult and fundamental question is how to formally derive this restriction through independent morpho-syntactic principles; since it is simultaneously defined in linear terms such as *right edge*, but also interacts with structural syntactic units and processes such as nodes, constituents, movement, and multidominance, it is not clear where in grammar the Right Edge Restriction is situated.

In the following sections, I will present data that motivates a post-syntactic analysis for a subset of Right Edge Sharing cases, and propose a post-syntactic linearization algorithm that derives its properties as well as deriving the Right Edge Restriction via the interactions of parallel merge and linearization. As a pleasant outcome, this post-syntactic linearization proposal is compatible with deriving a unified Right Edge Restriction for both all sharing structures, so we do not need to propose multiple distinct analyses of the restriction.

³Bachrach and Katzir (2017) actually proposes a bi-directional edge restriction. It also contains a mirror image of (10) regarding the left edge, i.e. a *Left Edge Restriction*. I discuss the predictions and problems of such a formulation in section §3.3.2.

2 (Minimally) Two Structures: Constituent vs. String Sharing

As the investigation of Right Edge Sharing phenomena has uncovered more and more conflicting observations, some scholars have argued for the need for heterogenous analyses; languages with multiple different mechanisms (Barros and Vicente, 2011; Belk et al., 2023). Barros and Vicente (2011) argues that English Right Node Raising is heterogeneous; it subsumes both ellipsis and multidominance structure. In this section, I show that Turkish also requires minimally two distinct structures: a *constituent sharing* process with movement properties, and a *string sharing* process with properties that are defined by linearly morpho-phonological order and inconsistent with movement analyses. The *string sharing* class is highly unconstrained in its potential targets, being able to share contiguous strings of material that do not form a constituent, and not being sensitive to syntactic islands. In contrast, *constituent sharing* structures are more constrained; they can target only constituents, and the sharing operation is island bounded. See (11) for *constituent sharing* examples sharing one or more arguments, and (12) for *string sharing* examples sharing non-constituent strings of words and affixes.

(11) *Constituent Sharing Examples*

- a. Egemen kaybetmiş __, (ve) Ferhat da bulmuş [sınıf
Egemen lose-EVID and Ferhat CONST.TOP find-EVID class
defterini].
book-POSS-ACC
'It seems Egemen lost, and Ferhat found the class book.'
- b. Egemen kaybetmiş __ __, (ve) Ferhat da bulmuş
Egemen lose-EVID and Ferhat CONST.TOP find-EVID
[Gould'un önünde] [sınıf defterini].
Gould.hall-GEN front-POSS-LOC class book-POSS-ACC
'It seems Egemen lost, and Ferhat found the class book in front of
Gould hall.'

(12) *String Sharing Examples*

- a. Miraç [hukuk kütüphanesinde __] __ __, (ve) Tayfun da
Miraç law library-POSS-LOC and Tayfun CONTR.TOP
karanlık bir kafede çalışmayı tercih ediyor.
dark one cafe-LOC work-NOMLZR-ACC prefer do-PROG
'Miraç prefers to work in the Law School library, and Tayfun prefers
to work in a dark cafe.'
- b. Miraç [hukuk kütüphanesi-__ __] __ __, (ve) Tayfun da
Miraç law library-POSS and Tayfun CONTR.TOP
karanlık bir kafe-de çalışmayı tercih ediyor.
dark one cafe-LOC work-NOMLZR-ACC prefer do-PROG
'Miraç prefers to work in the Law School library, and Tayfun prefers
to work in a dark cafe.'

Constituent sharing examples typically result in the sharing of one or more arguments of the predicate, which are invariably constituents, and show movement properties. This class of constructions are most comparable to typical Right Node Raising examples in English. *String sharing*, on the other hand, has a different character, distribution, and, I argue, a different derivation. In (12), we can see that string sharing structures can result in the sharing of non-constituent strings of words and morphemes, sometimes even sharing sub-word morphemes and leaving stems lacking suffixes within the conjuncts.

(12) also shows a different distribution; *string sharing* typically results in the sharing of some predicate morphology (i.e. suspended affixation), or the full predicate (i.e. backwards gapping), or the predicate + adjacent material (i.e. backwards gapping + suspended affixation). This distribution may seem parasitic on the fact that we are partially or fully sharing the *predicate*, but I argue that this is epiphenomenal; string sharing targets the rightmost shared node, which happens to be the predicate in a head-final language like Turkish. The same process would, and can derive similar sharing patterns without any verbal sharing in a head-initial language like English. In the following subsections, I will be demonstrating the shared and differing properties of *constituent sharing* and *string sharing* tabulated in Table (13) below.

(13)

	String sharing	Constituent sharing
Gap-internal generation	✓	✓
Right Edge Restriction	✓	✓
Constituency requirement	✗	✓
Island sensitivity	✗	✓
Valid Target	strings of morphemes	extraposable constituents

2.1 Gap-internal Generation

Naturally, when discussing a filler-gap dependency, we should ask if the gap is really a gap; is the shared element syntactically associated with the gap position? Yes. We can find morphosyntactic evidence that the shared material is generated in the gap position coming from selectional restrictions: gap and filler positions in Right Edge Sharing sentences must abide by categorical, lexical, and case selection restrictions of the relevant predicates within the structure. For example, the verbs *bik-* ‘become fed up’ and *nefret et-* ‘hate’ require an ablative case argument in Turkish. If a conjunction houses these verbs, and their argument is shared at the right edge, it must appear in the l-selected *ablative* case, as can be seen in (14).

- (14) a. *L-selected ABL argument: ✓*
 Ali *bıktı* __, (ve) Veli *de* *nefret etti* __, **ben-den**.
 Ali *become_fed_up* and Veli *CONTR.TOP hate did* 1SG-ABL
 ‘Ali got fed up with __, and Veli came to hate **me**.’
- b. *Not l-selected ACC/NOM argument: ✗*

*Ali bıktı __, (ve) Veli de nefret etti __,
 Ali become_fed_up __ and Veli CONTR.TOP hate did __,
 ben-{\emptyset/i/...}.
 1SG-{\NOM/ACC/...}
 int'd: 'Ali got fed up with __, and Veli came to hate **me**.'

We can note that there are apparent counterexamples, where a rightmost element that could appear to be shared does not match the l-selection criteria of non-final conjuncts, like (15), where the verb *sev-* 'love' selects a caseless or accusative argument while the ostensibly shared argument at the right edge *ban-a* '1sg-DAT' is a dative argument. However, with care, we can rules turn out to be cases of *argument drop*.

- (15) Ali sev-di, ve yardım et-ti **ban-a**.
 Ali love-PAST and help do-PAST 1SG-DAT
 A: 'Ali loved (me) and helped me.'
 B: 'Ali loved (someone else) and helped me.'
 ✗ Structure: [Ali sevdi __i], ve yardım etti **ban**_{*i*}.
 ✓ Structure: [Ali *pro*_{*i/j*} sevdi], ve yardım etti **ban**_{*i*}.

Firstly, while (15) can be interpreted in a way where the first conjunct argument co-refers with *ban-a* 'me-DAT', it can refer to other referents. This is the case we would expect if the first conjunct hosted a phonologically null *pro* argument which can freely be interpreted as referring to many different contextually provided referents.

Additionally, we can look at structures where object drop is not licensed. It turns out, this is not easy in Turkish, where animate, definite, and specific arguments are easily and commonly dropped. However, [Gribanova \(2013\)](#) develops a diagnostic for object drop in Russian, a similarly difficult language to diagnose argument drop. [Gribanova](#) argues that, even if a language has an argument drop mechanism, this mechanism would crucially apply only to arguments, and not to larger structures that contain them. Specifically, in sentences with coordinated arguments, object drop mechanisms could target the arguments themselves, but would not be able to elide coordinators like *i* 'and' and *ili* 'or,' which [Gribanova](#) uses to distinguish argument drop from ellipsis.

We can apply the same test to Turkish Right Edge Sharing cases to rule out object drop. See (16) for such a test. We can see that we can take the control sentence in (16-a) which lacks any sharing, and derive the corresponding Right Edge Sharing sentence (16-b). In (16-b), the pivot contains a disjunction of direct object and goal pairs, and the first conjunct has a gap corresponding to this whole disjunction phrase. (16-b) is acceptable, and just like the Russian cases above, this sentence cannot be derived via argument drop, since argument drop of the direct objects and goal arguments would *strand* the disjunctive coordinator *ya da* 'or' as in (16-c), which is maximally unacceptable.

- (16) a. *Control: No Sharing*

Dün Ali kontratı masaya ya da dosyayı dolaba
yesterday Ali contract-ACC table-ALL or dossier-ACC cupboard-DAT
koymuş, (ve) bugün de Veli kontratı masaya ya da
put-EVID and today CONTR.TOP Veli contract-ACC table-ALL or
dosyayı dolaba koymuş.
dossier-ACC cupboard-DAT put-EVID
‘Yesterday, Ali put the contract on the table or the dossier in the cup-
board, and today, Veli put the contract on the table or the dossier in the
cupboard.’

b. *Test: Sharing of a Disjunctive Coordination*

Dün Ali koymuş __, (ve) bugün de Veli koymuş
yesterday Ali put-EVID and today CONTR.TOP Veli put-EVID
kontratı masaya ya da dosyayı dolaba.
contract-ACC table-ALL or dossier-ACC cupboard-DAT
‘Yesterday, Ali put (the contract on the table or the dossier in the cup-
board), and today, Veli put the contract on the table or the dossier in
the cupboard.’

c. *Test: Object Drop Version*

*Dün Ali koymuş *pro_{object} pro_{goal} ya da pro_{object} pro_{goal}*, ve
yesterday Ali put-EVID or and
bugün de Veli koymuş **kontratı masaya ya da**
today CONTR.TOP Veli put-EVID contract-ACC table-ALL or
dosyayı dolaba.
dossier-ACC cupboard-DAT
‘Yesterday, Ali put (the contract on the table or the dossier in the cup-
board), and today, Veli put the contract on the table or the dossier in
the cupboard.’

Thus, if we use these diagnostics, we can rule out argument drop structures, and see that Right Edge Sharing structures nevertheless require gaps to abide by category, case, and lexical selection constraints of the predicates they are associated with. In other words, the shared material obeys all syntactic constraints associated with the gap positions, and therefore are indeed generated at these gaps.

2.2 Constrained by the Right Edge Restriction

The essential property that brings together the two varieties of Right Edge Sharing is that they both are strictly constrained by the Right Edge Restriction (RER). If shared elements, i.e. gaps or the filler, does not occupy the rightmost position within the non-final conjuncts or relevant host constituents, neither a string sharing nor a constituent sharing strategy result in a grammatical string. See (17) and (18) for a grammatical RER-obeying and an ungrammatical RER-violating example of constituent sharing.

(17) *RER-obeying strings in constituent sharing variety*

- a. Ali $_i$ *demle-di* [**çay-ı**]_i, (ve) Veli de $_j$ *iç-ti*
 Ali brew-PAST tea-ACC and Veli CONTR.TOP drink-PAST
 [**çay-ı**]_j.
 tea-ACC
- b. Ali *demle-di* $_$, (ve) Veli de *iç-ti* **çay-ı**.
 Ali brew-PAST and Veli CONTR.TOP drink-PAST tea-ACC
 ‘What Ali did was *brewed* the tea, and what Veli did was *drink* the tea.’

(18) *RER-violating strings in constituent sharing variety*

- a. Ali **çay** *demle-di*, (ve) Veli de **çay** *iç-ti*.
 Ali tea brew-PAST and Veli CONTR.TOP tea drink-PAST
- b. *Ali $_i$ *demle-di* [**çay**]_i, (ve) Veli de **çay** *iç-ti*.
 Ali brew-PAST tea and Veli CONTR.TOP tea drink-PAST
- c. *Ali *demle-di* $_$, (ve) Veli de **çay** *iç-ti*.
 Ali brew-PAST and Veli CONTR.TOP tea drink-PAST
 int’d: ‘Ali tea-brewed, and Veli tea-drank.’

Crucially, the shared element must be able to occupy a right edge position in all gap positions for the Right Edge Sharing counterpart to be grammatical. In (17-a), the direct object ‘*çay*’ can occupy the right edge position via scrambling, which fulfils the Right Edge Restriction, so the shared counterpart (17-b) is grammatical. In (18), it is opposite. The preverbal caseless direct object *çay* ‘tea’ in (18-a) cannot move to the right edge in the first conjunct, see (18-b), and because this rightward extraposition is not grammatical, the shared counterpart (18-c) is also ungrammatical. In essence, if one cannot construct a grammatical gapless counterpart of the sentence where shared elements are at the right edge, then the sharing example is not grammatical.⁴

Likewise, the string sharing variety of Right Edge Sharing obeys the Right Edge Restriction. If the shared elements obey the Right Edge Restriction then the resultant string is grammatical, otherwise the sharing of identical elements is unacceptable. In (19) *kitaplarını seviyor* can be acceptably shared since it occupies the right edge in the left conjunct. Please note that *kitaplarını seviyor* is not a constituent, it consist of a relative clause internal accusative head noun and the matrix verb, yet this sentence is acceptable, and therefore must be derived by the string sharing mechanism on account of insensitivity to constituency and islands.

(19) *RER-obeying strings in string sharing variety*

- a. Ali [Fransız *yazarlar-ın* **kitapları-nı**] **seviyor**, (ve) Veli
 Ali French writer-PL-GEN book-PL-POSS-ACC like-PROG and Veli
 de Fransız *şairlerin* *kitaplarını* **seviyor**.
 CONTR.TOP French poet-PL-GEN book-PL-POSS-ACC like-PROG

⁴The ungrammaticality of (18-b) does not mean that caseless direct objects cannot rightward extrapose at all; they can, given the correct information structure and intonational support. Nevertheless, (18-b) is not well-formed since these conditions do not apply. So, (18-c) which shares the same structure (modulo parallel merge) is also ungrammatical. See discussion in section §3.4 for more detail.

- b. Ali [Fransız *yazarların* ___] __, (ve) Veli de Fransız
 Ali French writer-PL-GEN and Veli CONTR.TOP French
şairlerin kitaplarını seviyor.
 poet-PL-GEN book-PL-POSS-ACC like-PROG
 ‘Ali likes the books of French (prose) authors and Veli likes the books
 of French poets.’

However, if all shared elements do not form a right edge contiguous string within each non-rightmost constituent, like (20) where the target string is not rightmost in the left conjunct, this string cannot be grammatically generated.

(20) *RER-violating strings in string sharing variety*

- a. Ali Fransız **yazarların kitaplarını** seviyor, (ve) Veli
 Ali French writer-PL-GEN book-PL-POSS-ACC like-PROG and Veli
 de *Alman yazarların kitaplarını* seviyor.
 CONTR.TOP French writer-PL-GEN book-PL-POSS-ACC like-PROG
- b. *Ali Fransız ___ ___ seviyor, (ve) Veli de *Alman*
 Ali French ___ ___ like-PROG and Veli CONTR.TOP German
yazarların kitaplarını seviyor.
 writer-PL-GEN book-PL-POSS-ACC like-PROG
 int’d: ‘Ali likes the books of French authors and Veli likes the books of
 German poets.’

Since Turkish has a head-final syntax, the predicate occupies the rightmost position within each conjunct in clausal coordination in the absence of scrambling. This fact combines with the Right Edge Restriction to effectively derive a conspiracy; in Turkish string sharing, most sharing examples minimally contain (part of the) predicate, making sharing seem parasitic on *backwards gapping* of the verb. To summarize, both *constituent* and *string sharing* structures are robustly conditioned by the Right Edge Restriction.

2.3 Constituent Sharing

After exploring what brings the *constituent* and *string sharing* structures together, now I will demonstrate they have some vastly differing syntactic properties that necessitate different analyses. Here, I show that constituent sharing structures target syntactic constituents and are blocked by islands. All these properties support a syntactic movement analysis of this class of sharing structures.

2.3.1 Constituency Requirement

As the name suggests, this class of structures results in the sharing of constituents. We can see (21) for a single-constituent and double-constituent sharing example.

(21) *Constituent Sharing Examples (= (11))*

- a. Egemen kaybetmiş __, (ve) Ferhat da bulmuş [sımf
Egemen lose-EVID and Ferhat CONST.TOP find-EVID class
defterini].
book-POSS-ACC
'It seems Egemen lost, and Ferhat found the class book.'
- b. Egemen kaybetmiş __ __, (ve) Ferhat da bulmuş
Egemen lose-EVID and Ferhat CONST.TOP find-EVID
[Gould'un önünde] [sımf defterini].
Gould.hall-GEN front-POSS-LOC class book-POSS-ACC
'It seems Egemen lost, and Ferhat found the class book in front of
Gould hall.'

Unfortunately, there is no good way to demonstrate this fact, since any sentence that has non-constituent target is fully covered by the *string sharing* mechanisms; there is no test string that we can generate to show the unacceptability of a non-constituent target in a *constituent sharing* structure that would *not be derivable* by the much less constrained *string sharing* mechanisms. However, we will see that other properties can distinguish the two classes of Right Edge Sharing structures, and non-constituent targets as a diagnostic will nevertheless be useful for diagnosing if a string is *string sharing* in section §2.4.

2.3.2 Island Sensitivity

It is a famous puzzle that English Right Node Raising, while having some properties that are best explained by syntactic movement, is not bounded by most syntactic islands, except for the *Coordinate Structure Constraint* islands (Wexler and Culicover, 1980; McCawley, 1982; Sabbagh, 2007; Bachrach and Katzir, 2009, 2017). See (22) for examples where the shared material originates inside a relative clause and an adjunct island, which are nevertheless acceptable sharing sentences.

- (22) (Bachrach and Katzir, 2017, 4)
- a. [John knows a man [RC who hugged __]], and [Mary knows a woman [RC who kissed **the new vice president**]].
- b. [John left [Adjunct after you hugged __]], and [Mary left [Adjunct after you kissed **the new vice president**]].

This is difficult to explain for movement analyses, but Sabbagh (2007) argues that this configuration is still derivable via movement using certain cyclic spellout assumptions, while Bachrach and Katzir (2017) argue based on this fact and other data that these English structures are derived without movement and through multidominance instead.

This debate aside, we can use islands as a diagnostic tool in Turkish, and use this as evidence to distinguish between movement and in-situ analyses. However, unlike English, we cannot test sharing of arguments or adjuncts directly from inside an island in Turkish through a canonical word order sentence; Turkish relative clauses precede their head noun, and thus clause-internal material is not *rightmost*, which violates the Right Edge Restriction repeated in (23).

- (23) *Right Edge Restriction* (Bachrach and Katzir, 2017, reformatted) (=10)
 Node α 's position is rightmost in all the non-rightmost constituents containing it, in which case it surfaces within the rightmost constituent.

Therefore, in order to test island sensitivity, we must construct sentences where a shared element both originates within an island, and also occupies the right edge of a coordination or embedded clause. Thankfully, Turkish also allows extensive scrambling, so that this configuration is in fact possible. Firstly, relative-clause internal arguments can scramble to right edge of a complex NP, as in (24).

- (24) *Complex NP Internal Scrambling*
- a. [Dün sen-i gör-en adam]_{DP} bu mu?
 yesterday 2-ACC see-REL man 3.PROX Q
 'Is this [the man that saw you yesterday]?'
- b. [Dün ____i gör-en adam [sen-i]_i]_{DP} bu mu?
 yesterday see-REL man 2-ACC 3.PROX Q
 'Is this [the man that saw you yesterday]?'

Therefore if we scramble a relative clause internal direct or indirect object to the right edge of the complex NP, and the complex NP itself is scrambled to a post-verbal position within the first conjunct, then the right edge restriction is satisfied, and we can test if the island-internal position of said object affects grammaticality of sharing.

- (25) Context: *You went to an underground party held in a sketchy abandoned building with your friend, and ran into other people from school there. Your concerned friend Ali heard about it, and is angry that you took this risk.*
- a. Ali güvenmiyor [DP [seni] gören herife], Veli=yse
 Ali trust-NEG-PROG 2-ACC see-REL guy-DAT Veli=CONTR.TOP
 baya kızıyor [seni] oraya götüren arkadaşına.
 a.lot be_angry-PROG 2-DAT there-DAT take-REL friend-2.POSS-DAT
 'Ali doesn't trust the guy that saw you, and Veli is angry at the friend that took you there.'
- b. ?Ali güvenmiyor [DP ____i gören herife [seni]_i], Veli=yse
 Ali trust-NEG-PROG see-REL guy-DAT 2-ACC Veli=CONTR.TOP
 baya kızıyor ____j oraya götüren arkadaşına [seni]_j.
 a.lot be_angry-PROG there-DAT take-REL friend-2.POSS-DAT 2-ACC
- c. *Ali güvenmiyor [DP ____i gören herife ____i], Veli=yse
 Ali trust-NEG-PROG see-REL guy-DAT 2-ACC Veli=CONTR.TOP
 baya kızıyor ____i oraya götüren arkadaşına [seni]_i.
 a.lot be_angry-PROG there-DAT take-REL friend-2.POSS-DAT 2-ACC

The example set in (25) shows that the direct object *seni* '2-ACC' can be scrambled to the right edge of the first conjunct as in (25-b), albeit with some degradation,⁵ and therefore satisfy the right edge restriction; but nevertheless it cannot be shared at the

⁵The degradation is likely partly due to the *seni* '2-ACC' occurring twice despite not contrasting between the conjuncts, and partly due to the unnaturalness of combining the rare complex NP internal and post-verbal scrambling patterns.

right edge of the full coordinated sentence as seen in (25-c). Below, (26) shows another example of a relative clause internal direct object occupying the rightmost position, but nevertheless not being able to be shared at the right edge.

- (26) a. ?Emekli olmuş [DP $__i$ doğurtan doktor [Ayşe-yi]], ve
 retired become-EVID birth-CAUS-REL doctor Ayşe-ACC and
 ölmüş beş yaşında $__i$ ameliyat eden cerrah
 die-EVID five age-POSS-LOC surgery do-REL surgeon Özge-ACC
 [Özge-yi]

‘The doctor that helped birth Ayşe has retired, and the surgeon that operated on Özge when she was five years old has died.’

- b. *Emekli olmuş [DP $__i$ doğurtan doktor $__i$], ve ölmüş
 retired become-EVID birth-CAUS-REL doctor $__i$ and die-EVID
 beş yaşında $__i$ ameliyat eden cerrah [Özge-yi]
 five age-POSS-LOC surgery do-REL surgeon Özge-ACC

‘The doctor that helped birth Özge has retired, and the surgeon that operated on Özge when she was five years old has died.’

In summary, constituent sharing examples in Turkish are restricted by islands; material cannot be shared out of a relative-clause internal position. This is very a strong argument in favor of a syntactic movement analysis of constituent sharing; island restrictions hallmark properties and diagnostics for syntactic movement, which go through in these cases.

2.4 String Sharing

In contrast to *constituent sharing* structures, *string sharing* has a different character which is markedly insensitive to syntactic diagnostics and properties. This class of sharing structures are insensitive to constituency, wordhood, syntactic islands, and can target virtually any set of adjacent morphemes as long as they obey the Right Edge Restriction. This class also unifies *backwards gapping* due to verbs being clause-final in Turkish, and sub-word-level sharing, i.e. *Suspended Affixation*.

2.4.1 Non-constituency & Iterability over Morphemes

One interesting characteristic of string sharing structures is that the shared material be a non-constituent string, as in (27) where several suffixes on the direct object are shared as well as the verb. However, this sharing is bounded by contiguity; non-contiguous strings cannot be shared, as in (28).

- (27) *Sharing of suffixes alongside verb: -PL-POSS-ACC*
 Ali kitap- $__$ $__$, ve Veli de defter-**ler-in-i** bağışla-**dı**.
 Ali book and Veli CONTR.TOP notebook-PL-POSS-ACC donate-PAST
 ‘Ali donated his books, and Veli donated his notebooks.’

- (28) *Non-contiguous target in string sharing variety*

- a. Ali **Fransız** *yazarların* **kitaplarını** **seviyor**, (ve) Veli
 Ali French writer-PL-GEN book-PL-POSS-ACC like-PROG and Veli
 de Fransız *şairlerin* **kitaplarını** **seviyor**.
 CONTR.TOP French poet-PL-GEN book-PL-POSS-ACC like-PROG
- b. *Ali *yazarların* ____, (ve) Veli de **Fransız**
 Ali writer-PL-GEN and Veli CONTR.TOP French
şairlerin **kitaplarını** **seviyor**.
 poet-PL-GEN book-PL-POSS-ACC like-PROG
 int'd: 'Ali likes the books of French (prose) authors and Veli likes the
 books of French poets.'

While these examples make it seem like string sharing targets the verb, this label would misrepresent string sharing. The *string sharing* variants of the Right Edge Sharing structures more correctly applies to rightmost morphemes in all non-final conjuncts, which happens to belong to the inflected predicate in a head-final language like Turkish. For example, in clauses, the shared material can be tense and agreement inflection, i.e. the typical *Suspended Affixation* case in Turkish, (29). Alternatively, the whole predicate can be shared, which is typically called *Backwards Gapping*, as in (30). This is just a simple case of rightmost word, which happens to be the verb, being shared in this construction.

(29) *Suspended Affixation of Tense + Agreement* (Kornfilt, 1996, 110)

- a. Gelmiş=__ ve gitmiş=**ti-im**.
 come-PFV and go-PFV=PAST-1.SG
 'I had come and gone.'
- b. Kitabı okuyacak=__ ve anlayacak=**sin**.
 book-ACC read-FUT and understand-FUT=2SG
 'You will read and understand the book.'

(30) *Backwards Gapping of the inflected verb*

- a. Ali dün kumarda 50 lira __, bugün de 100 lira
 Ali yesterday gambling-LOC 50 lira today CONTR.TOP 100 lira
kaybetmiş.
 lose-EVID
 'Ali lost 50 liras yesterday, and 100 liras today gambling.'
- b. Ali dün kumarda 50 lira __, bugün de 100 lira
 Ali yesterday gambling-LOC 50 lira today CONTR.TOP 100 lira
kaybetmişse artık birşey yapmak lazım.
 lose-PFV-COND now something do-NOMLZR necessary
 'If Ali has lost 50 liras yesterday, and 100 liras today gambling,
 something needs to be done.'

In non-finite predicate constructions, the shared element can be as minimal as tense + agreement, or the full predicate (31-a), or the predicate + an adjacent morpheme, like the case suffix + predicate in (31-b). What is relevant is not that the sharing

is sensitive to inflection class, but the fact that tense and agreement inflection are rightmost within the head-final Turkish clause structure.

- (31) a. *Suffix sharing alongside adjectival predicate*
 Biz bazen yemeğ-e __, bazen de tatlı-ya
 1PL sometimes food-DAT sometimes CONTR.TOP dessert-DAT
bağımlı=y-dı-k
 addicted=COP-1PL
 ‘We were sometimes addicted to food, and sometimes addicted to dessert.’
- b. *Suffix sharing alongside nominal predicate*
 Ben birkaç yıl Ankara-__ __, birkaç yıl da Adana-da
 1SG a.few year Ankara a.few year CONTR.TOP Adana-LOC
doktor=du-m
doctor=past-1sg
 ‘I was a doctor in Ankara for a few years, and in Adana for a few years.’

If we look at a nominal structure like (32), we see that the string sharing results in sharing of contiguous number and case suffixes, which are rightmost due to the suffixing structure of the Turkish morphological system. String sharing is not categorically restricted, it is restricted by the position of the target morpho-syntactic material.

- (32) kedi-__ ve köpek-ler-imiz-i
 cat and dog-PL-POSS.1PL-ACC
 ‘our cats and dogs (acc.)’

As long as the target is a contiguous string of morphemes that occupies the right edge of sister conjuncts or other constituents, virtually any contiguous string that is contiguous with the verb can be shared, as demonstrated in the variety of possible sharings in (33).⁶⁷

- (33) **Control:** *non-shared sentence*
 Ali ünlü bir şair-in kitab-ın-ı al-mak isti-yor=du,
 Ali famous one poet-GEN book-3.POSS-ACC buy-INF want-PROG=PAST

⁶The marginal status of (33-e) has to do with the lack of contrast between the first and second conjunct *kitap-* ‘book.’ If the surviving element to the left of the gap contrasts with the correlate, as below, it becomes grammatical.

- (i) Ali ünlü bir şair-in kitap-__ __, Veli de ünlü bir tarihçi-nin defter-in-i
 Ali famous one poet-GEN book Veli CONTR.TOP famous one poet-GEN notebook-POSS-ACC
almak isti-yor=du.
 buy-INF want-PROG=PAST
 ‘Ali wanted to buy the *book* by a famous poet and Veli wanted to buy the *notebook* of a famous historian.’

⁷Caveat for ‘*virtually*’: Complex heads restrict string sharing. It cannot separate the morphemes making up a complex head such as the *V+v+T+Agr* complex head in Turkish finite verbs, or the *V+Asp* and *T+Agr* complex heads in non-finite predicates. See Kural (1993); Kornfilt (1996); Keleşir (2001); Zanon (2014); Serova (2019) for discussion of Turkish head movement chains.

Veli de ünlü bir tarihçi-nin kitab-m-1 al-mak
 Veli CONTR.TOP famous bir historian-GEN book-3.POSS-ACC buy-INF
 isti-yor=du.

want-PROG=PAST

‘Ali wanted to buy the book of a famous poet, and Veli wanted to buy the book of a famous historian.’

Examples: *Various string sharings alongside verb*

- a. Ali ünlü bir şair-in kitab-m-1 al-mak isti-yor-__, Veli
 Ali famous one poet-GEN book-3.POSS-ACC buy-INF want-PROG Veli
 de ünlü bir tarihçinin kitabını almak
 CONTR.TOP famous bir historian-GEN book-3.POSS-ACC buy-INF
 istiyor=**du**.
 want-PROG=PAST
- b. Ali ünlü bir şair-in kitab-m-1 al-mak __, Veli de
 Ali famous one poet-GEN book-3.POSS-ACC buy-INF Veli CONTR.TOP
 ünlü bir tarihçinin kitabını almak **istiyor=du**
 famous bir historian-GEN book-3.POSS-ACC buy-INF want-PROG=PAST
- c. Ali ünlü bir şair-in kitab-m-1 __, Veli de
 Ali famous one poet-GEN book-3.POSS-ACC Veli CONTR.TOP
 ünlü bir tarihçinin kitabını **almak istiyor=du**
 famous bir historian-GEN book-3.POSS-ACC buy-INF want-PROG=PAST
- d. Ali ünlü bir şair-in kitab-ı-__ __, Veli de ünlü bir
 Ali famous one poet-GEN book-3.POSS Veli CONTR.TOP famous bir
 tarihçinin kitabı-**mı** **almak istiyor=du**
 historian-GEN book-3.POSS-ACC buy-INF want-PROG=PAST
- e. ??Ali ünlü bir şair-in kitap-__ __, Veli de ünlü bir
 Ali famous one poet-GEN book Veli CONTR.TOP famous bir
 tarihçinin kitabı-**mı** **almak istiyor=du**
 historian-GEN book-3.POSS-ACC buy-INF want-PROG=PAST
- f. Ali ünlü bir şair-in __, Veli de ünlü bir
 Ali famous one poet-GEN Veli CONTR.TOP famous bir
 tarihçinin **kitabını** **almak istiyor=du**
 historian-GEN book-3.POSS-ACC buy-INF want-PROG=PAST
- g. Ali ünlü bir şair-__ __, Veli de ünlü bir tarihçi-**nin**
 Ali famous one poet Veli CONTR.TOP famous bir historian-GEN
kitabını **almak istiyor=du**
 book-3.POSS-ACC buy-INF want-PROG=PAST

In short, string sharing is not sensitive to constituency at all, and can share myriad non-constituent strings, even to the extent of splitting sharing strings consisting of words + suffixes from the preceding word. This behaviour cannot be explained in any satisfactory way with movement; either by exceptional movement of the shared suffixal nodes themselves, or via exceptional remnant movement that is able to split stems from their suffixes in the exact way that is necessary of the surface string. This

issue is also not one specific to Turkish, as the following English examples are similarly problematic to derive via movement.

- (34) (Wilder, 1997, 83&87)
- a. [His theory under-__], and [her theory over-**generates**].
 - b. We must distinguish [[psycho-__] __] from [[socio-**linguistic**] **claims**]

In conclusion, string sharing strings need an analysis that is not restricted by syntactic movement, but mechanisms that are sensitive to morpheme boundaries, linear adjacency, and surface form identity.

2.4.2 No Island Sensitivity

Moving on to islands in *string sharing* construction, we find a clear answer: they are not sensitive to island boundaries. See (35), where sharing targets a contiguous string of words and morphemes that crosses one or more island boundaries, yet the sentence is acceptable. In (35), the shared string incorporates material from the matrix clause (the verb and head noun of the direct object) as well as material from inside a relative clause (relative clause subject, case suffix, verb, and relativizer).

- (35) *Sharing of a string that crosses island boundaries*
- Ali [[Fransız __]_{RC} __]_{DP} __, ve Veli de [[Alman
 Ali French and Veli CONTR.TOP german
yazar-lar-ın yaz-dığ-ı]_{RC} **roman-lar-ı**]_{DP} **sev-iyor**.
 writer-PL-GEN write-REL-POSS novel-PL-ACC like-PL-ACC
 ‘Ali likes (novels that) French (authors wrote), and Veli likes novels that
 German authors wrote.’

In summary, the string sharing class class is insensitive to constituency and islands. Island insensitivity is strong evidence supporting an in-situ analysis without syntactic extraction from the gap positions.

3 Proposal

The properties we have explore above show that Right Edge Sharing consists of two classes with very different properties. *Constituent sharing* structures show direct evidence of syntactic movement, while *string sharing* structures do the opposite. In this section, I argue that constituent sharing variant is across-the-board movement, as analyzed as right-attaching extraposition which results in the syntactic extraction of a parallel merged constituent from a coordination structure, while the string sharing class of Right Edge Sharing structures is derived through linearization of parallel-merged nodes in-situ. I present a linearization protocol that derives the Right Edge Restriction that conditions both classes of Right Edge Sharing through an *asymmetry* between the visibility of parallel-merged nodes in left-linearized and right-linearized sister nodes, which culminates in the *Asymmetric Sister Linearization Principle*.

This proposal for refactoring Right Edge Sharing consists of the following pieces: (i) the underlying structure for these sentences in Turkish involve a large ContrTopP-sized

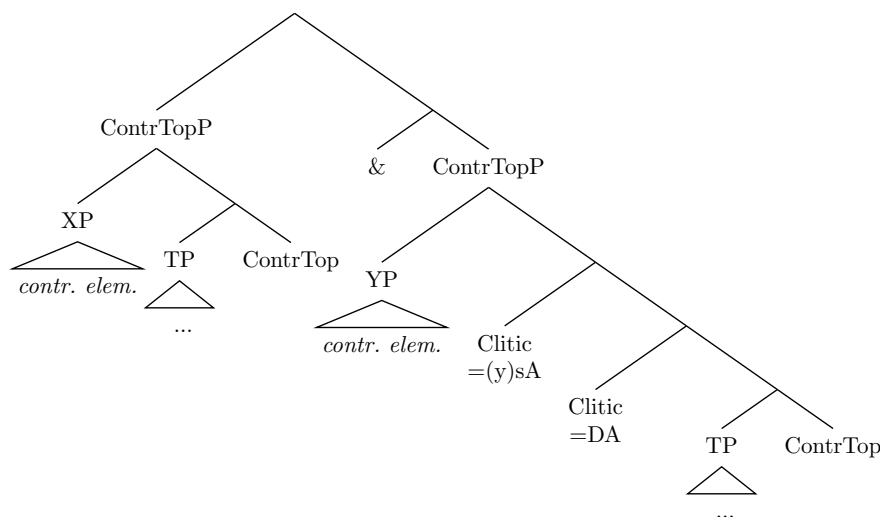
coordination, (ii) the constituent sharing class of examples are derived via across-the-board extraction, following similar previous analyses, (iii) the string sharing examples are derived through parallel merge and linearization, in a similar way to other previous in-situ multidominance analyses, but crucially (iv) we need to modify previous multidominance analyses to capture the Turkish patterns and rule out problematic predictions.

In order to fulfill these goals in an orderly fashion, this section proceeds step-by-step in the following manner: Section §3.1 defines and motivates the proposed syntactic clausal structure and section §3.2 analyzes *constituent sharing* structures as across-the-board extraction of parallel merged nodes. Section §3.3 presents the in-situ multidominance analysis of *string sharing* structures and demonstrates how the analysis derives the range of attested patterns.

3.1 Clausal size in Turkish

In contrast with various *small coordination* proposals (VP, *vP*, TP-coordination) for other sharing phenomena (Johnson, 2009; Toosarvandani, 2013; Johnson, 2017), a multitude of conjunct-internal scrambling positions and a left edge contrastive topic position marked with the contrastive topic clitics *=(y)sA* and *=DA* in Turkish motivate a minimally *ContrTopP*-sized coordination, crucially containing a TP projection alongside several higher positions for scrambling and the contrastive topic. Thus, I assume the coordination structure schematized in (36).

(36)



The evidence for coordination above TP comes from scrambling positions above *high subjects* in Turkish. Firstly, Turkish has a *vP*-internal subject position associated with generic, non-referential, and pseudo-incorporated subjects which are lower than referential direct objects and indirect objects; and a *vP*-external position for non-generic, referential subjects that occupies a position higher than referential direct

objects and indirect objects (Öztürk, 2002, 2005a,b; Gračanin-Yüksek and İşsever, 2011). This *vP*-external subject position is located linearly to the left of direct and indirect objects, hence I assume that this high subject position is located at spec-TP or thereabouts.

Crucially, we find scrambling positions within each conjunct that are higher than *high subjects*. Verbal arguments can be realized in leftward scrambled positions that are higher than the high subject position, as in (37). The bolded arguments in these examples are focused and appear to the left of italicized definite subjects, showing that scrambling positions higher than the subject position are also available inside each conjunct.

- (37) *Right edge sharing with scrambled arguments*
- a. Dün **kitap-lar-ı** *Ayşe* __, **dergi-ler-i** de *Gülin*
yesterday book-PL-ACC Ayşe __ magazine-PL-ACC CONTR.TOP Gülin
getir-di.
bring-PAST
‘Yesterday *Ayşe* (brought) the books, and *Gülin* brought the magazines.’
- b. Altın-lar-ı **dolab-a** *Aylin* __, **kasa-ya** da *Leyla*
gold-PL-ACC cupboard-DAT Aylin __ safe-DAT CONTR.TOP Leyla
sakla-mış
hide-EVID
‘Apparently, *Aylin* (hid) the gold in the cupboard, and *Leyla* hid the gold in the safe.’

Conjuncts in these structures also house left-edge contrastive focus and topic positions that occupy an even higher position than the aforementioned scrambling positions. This contrastive focus position lies on the left edge of conjuncts, and can be marked by just prosodic stress and intonation, but also by two optional contrastive topic particles, =*DA* and =(y)*sA*, which can even stack, as in (38).

- (38) *Right edge sharing with contrastive topic particles*
- Ali okula (git-ti), ...
Ali school-DAT go-PAST
- a. **Veli** işe git-ti.
Veli work-DAT go-PAST
- b. **Veli(=yse)(=de)** işe git-ti.
Veli=CONTR.TOP=CONTR.TOP work-DAT go-PAST

These contrastive particles attach a single phrasal constituent that occupies a left edge position in a clause and gives it a contrastive topic type information structure.⁸ These markers are licensed in coordinations, disjunctions, and even across separate

⁸The contrastive topic =*DA* is homophonous with =*DA* ‘also’. =(y)*sA* is homophonous with a conditional marker on predicates. Though these could be diachronic sources of the contrastive topic markers respectively, neither synchronically have the contrastive interpretation or the placement properties described here.

utterances in a discourse. Most importantly, this position is available within each conjunct in both types of Right Edge Sharing, see (39)–(41).

- (39) *Contrastive focus particles in coordination*
 Aslı kardeşini severdi, ve **Gülnur=da**
 Aslı sibling-POSS.3SG-ACC love-AOR-PAST and GülnurCONTR.TOP
 abilerinden nefret ederdi.
 elder_brother-PL-POSS.3SG-ABL hate do-AOR-PAST
 ‘Aslı loved her sibling, and *Gülnur* hated her older brothers.’
- (40) *Contrastive focus particles in disjunction*
 Tutku taziyeye gelmedi, ama **Yasemin=se**
 Tutku condolence-DAT come-NEG-PAST but Yasemin=CONTR.TOP
 gelip acımıza ortak oldu.
 come-CON pain-POSS.1PL-DAT partner be-PAST
 ‘Tutku didn’t come to say condolences, but *Yasemin* came and shared our sorrow.’
- (41) *Affix + Verb String Sharing with contrastive topic particles*
 Lale Harvard-___ __, Yağmur =da/sa Boğaziçi-**ne girmiş**.
 Lale Harvard Yağmur CONTR.TOP Boğaziçi-DAT enter-PFV
 ‘Apparently *Lale* got into Harvard, and *Yağmur* got into Boğaziçi University.’

In summary, the range of argument, scrambling, and contrastive focus positions shows that Right Edge Sharing structures house conjuncts that are quite large, much larger than *vP* or TP-sized. I conservatively label the contrastive topic position presented above as the specifier of a *ContrTopP* projection that minimally dominates TP and any scrambling positions above TP, as schematized in (36), however it could prove even larger given the correct diagnostic.

3.2 Constituent sharing variant is across-the-board movement

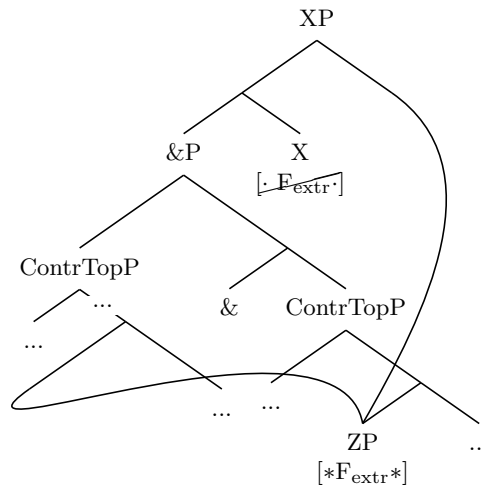
We have seen that *constituent sharing* structures target constituents and are blocked by relative clause islands in Turkish. These form strong diagnostics in favor of syntactic movement, and thus, I analyze constituent sharing strings as derived by across-the-board movement extraction of the shared element out of a coordination and rightward attachment on a higher projection (Ross, 1967; Sabbagh, 2007; Clapp, 2008).⁹ This analysis accounts for the island-boundedness and constituent targeting properties of the constituent sharing variety of Right Edge Sharing by virtue of proposing it is genuine syntactic movement. In Turkish, this is a case of *rightward extraposition* that proceeds *across-the-board* when the target of extraposition is inside a coordination. And, of course, this movement is bounded by constraints on syntactic movement; the

⁹If one takes issue with rightward attachment due to independent considerations such as the *Final-over-Final* Constraint (Sheehan et al., 2017), then an alternative remnant movement analysis is also possible. The shared element would be extracted across-the-board and merge leftwards onto the root, and the remnant coordination would move above the shared element. Spellout in remnant movement is a universal puzzle which I leave for now.

Coordinate Structure Constraint, islands, and syntactic constraints on extraposition also directly constrain *constituent sharing*.

I formalize *extraposition* as feature-driven \bar{A} -movement, and constituent sharing is the label we give to the output of this process applying across-the-board. This variety of Right Edge Sharing can target elements of a given category that are not structurally closest to the root of the structure, such as a DP direct object that is structurally lower than the DP subject, it is an \bar{A} -phenomenon, which I formalize as \bar{A} -movement driven by a movement-triggering selectional \bar{A} -feature on a head on the clausal spine. For descriptive simplicity, this feature is $[\cdot F_{\text{extr}} \cdot]$; the head bearing this feature probes for an XP with the matching \bar{A} feature $[*F_{\text{extr}}*]$, and triggers the internal merge of the element bearing these features to its right. Since I assume a multidominance framework for internal, external, and parallel merge, the structure I propose for constituent sharing structures is as presented in (42).

- (42) *Proposed Structure: Across-the-board movement of a featurally-marked element in multidominance*



As can be seen in (42) most clearly, a multidominance account of across-the-board extraction actually deals with one single syntactic object that occupies multiple locations: the gap locations where they are generated, and the final position after the movement. Thus, constituent sharing also involves *parallel merge*, but what sets it apart from *string sharing* is that the parallel merged is *extracted*, i.e. element undergoes internal merge to a position that c-commands all the gaps; compare this to *string sharing* where I will shortly argue that they do not undergo any extraction. I present how this formalization is linearized, and, more importantly, how the Right Edge Restriction for this movement can be derived by the same post-syntactic linearization mechanisms in section §3.4.

3.3 String sharing variant is in-situ multidominance

We have discussed that *string sharing* structures have a very peculiar set of properties; they target strings of morphemes of various sizes that do not form a constituent, can share sub-word material and thereby ‘steal’ affixes from words, and are wholly insensitive to islands. These properties outline processes that are not Syntactic, as they do not target constituents and are bounded by syntactic constraints, and instead outline a post-syntactic PF-interface phenomenon; Right Edge Sharing operates on Morphosyntactic units (morphemes), is sensitive to linear order (‘right edge’), is sensitive to some syntactic structure (requiring ‘conjunct/constituent-internally’ rightmost elements).

I analyze string sharing as in-situ multidominance; Syntax composes certain nodes using *Parallel Merge* (Citko, 2005), and this structure is passed onto the post-syntactic module. The post-syntax, among other PF-mapping processes, linearizes the hierarchical output of Syntax, and the linearization of parallel merged nodes results in shared nodes being pronounced within their final position if the configuration configuration of parallel-merged and non-parallel-merged nodes within the syntactic structure can be handled by the linearization algorithm; the structure is ungrammatical if it cannot be linearized (Gračanin-Yüksek, 2007; Citko, 2017, 2018; Citko and Gračanin-Yüksek, 2021).

These properties are very common across a range of previous multidominance analyses, however, previous analyses have different problems when applied to the Turkish data discussed herein. In sections §3.3.1 and §3.3.2, I present problems by two classes of analyses, and in section §3.3.3 I introduce a novel linearization procedure that incorporates approaches from both of these analysis families and extends over the novel Turkish data hereto discussed.

3.3.1 Shortcomings of LCA-based Multidominant Linearization

I have argued above for a multidominance analysis of *string sharing* structures, where the sharing mechanism is post-syntactic linearization. Such analyses are already developed and in use in contemporary theory, one large family being *Linear Correspondance Axiom* (LCA) based analyses (Kayne, 1994; Gračanin-Yüksek, 2007; Citko, 2018), so why not directly employ them? I now briefly discuss, using Citko (2018) as a case study, why these analyses are not a good fit for the Turkish data presented here.

Citko (2018) argues that Right Node Raising in Polish is in-situ sharing derived from multidominance structures through LCA-based linearization. Kayne (1994)’s original LCA algorithms and definitions are unable to handle multidominance structures, so they are redefined to apply to multidominant structures through the definitions in (43).

- (43) *Citko 2018’s Definitions and Machinery*
- a. *Full Domination* (Wilder, 1999, 590-591):
 - (i) X fully dominates α iff X dominates α and X does not share α .
 - (ii) α is shared by X and Y iff (i) neither of X and Y dominates the other, and (ii) both X and Y dominate α .

- b. *C-command* (adapted from Grosz 2015, 32)
 α c-commands β iff $\alpha \neq \beta$, α does not dominate β , and every mother of α dominates β .
- c. *Linearization*
 “The set A maps into a set of ordered pairs of terminal nodes (referred to $d(A)$). In this set of pairs, the first member of the pair precedes the second one. [...] [T]he $d(A)$ set includes only terminals fully dominated by A”

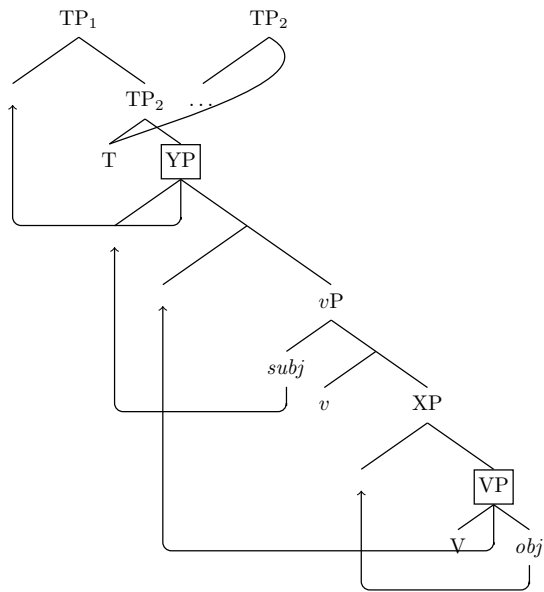
LCA-based linearization is built on asymmetric c-command relations between syntactic nodes resulting in linear precedence relationships. Due to this assumption, such a linearization results in two problems: one conceptual, and one theoretical.

The first problem is a well-known conceptual criticism of the LCA; while head-initial languages à priori conform to the LCA quite directly, head-final orders need to be derived by numerous movements of complements to positions c-commanding their selecting head. Since asymmetric c-command is required for precedence, each complement of right-headed projection must be reconfigured for the head to linearly follow its complement at PF-mapping (Brody, 2000; Abels and Neeleman, 2012; Fowlie, 2013, a.o.). Thus, the derivation of head-final structures is markedly more complex than head-initial structures, and posits a large amount of exceptional structure manipulation pre-linearization expressedly for the purpose of the correct surface linear order. I put this conceptual argument aside for a more direct problem regarding evidence of evacuation movement.

Gračanin-Yüksek (2007) and Citko (2018) show that LCA-based linearization, in order to fully linearize the structure, requires all non-shared nodes – i.e. nodes with a single mother – that do not asymmetrically c-command the shared nodes must move to a position that *does* asymmetrically c-command the shared nodes. If all non-shared nodes move to positions asymmetrically c-commanding all shared nodes, then the structure can be linearized without problem; however if such movement does not take place, a full linearization of the nodes cannot be deduced, since some pairs of nodes do not have asymmetric c-command relations one way or the other, which means no precedence between these nodes can be established.

In a more concrete example, if a non-shared element, such as an unshared direct object in the first conjunct, is not c-commanding a shared node, e.g. a verb that is shared across all conjuncts, then no linearization of the linear order of these two nodes cannot be deduced since: (i) the direct object does not c-command V, and (ii) not **all mothers** of V c-command the object in the first conjunct (VP_1 within the first conjunct does, but $VP_{2/3/n}$ in the other conjuncts don't), and consequently (iii) neither asymmetrically c-commands the other. This technical problem effectively results in necessary *evacuation movement* of non-shared elements to higher positions higher asymmetrically c-commanding shared nodes. For example, if V is shared, all VP internal non-shared elements must evacuate to asymmetrically c-commanding positions; if v is also shared, then every non-shared element inside vP must evacuate; and so on. (44) shows the minimum number of evacuation movements required to render a sentence with T sharing linearizable in a head-final structure.

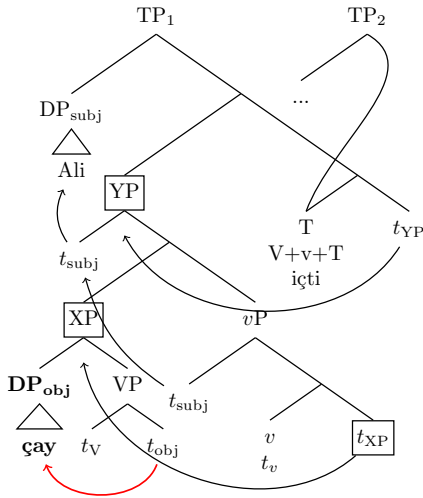
(44) *Configuratory Movement for LCA Linearization*



However, putting this conceptual question aside, I believe there is *empirical* counter-evidence against such movements. This prediction of the LCA-based linearization algorithm is not compatible with the distribution of *caseless direct objects* in Turkish.

Caseless pseudo-incorporated direct objects in Turkish have been noted to not be able to move to positions outside *vP/VP* (Aygen, 1999; Öztürk, 2002, 2005a,b), but such direct objects are fully grammatical in Right Edge Sharing strings despite as in (45), according to Citko (2018)'s analysis, having to have evacuated *vP/VP* to a position that is minimally higher than TP so that it is linearizable with respect to a tense-inflected verb. (45) illustrates the evacuation movements that are necessary to linearize such a structure, where, crucially, the caseless direct object has to undergo leftward movement to a position that asymmetrically *c-commands* V, which is marked in red; this movement would have to be exceptional movement for an otherwise syntactically immobile element.

- (45) Ali çay __, ve Veli kahve içti.
 Ali tea __ and Veli coffee drink-PAST



We need to note that we can find certain structures which have caseless direct objects being moved in very specific conditions; caseless direct objects are not fully imprisoned to such a low position 100% of the time. (46) shows that we can topicalize caseless objects, allowing for some degradation; however, these structures have different properties not found in Right Edge Sharing sentences with caseless objects.

- (46) ?[Çay]_{topic}, arada sırada __ içirim herhalde, ama hayatta bir daha
 tea occasionally drink-AOR-1SG probably but never one more
 [kahve]_{contr} içmeyeceğim.
 coffee drink-NEG-FUT-1SG
 ‘Tea, I’ll drink every now and then, but coffee, I’ll never drink again in my life.’

However, we can rule out this movement by other properties, such as the topic-comment style information structure interpretation, a specific intonational emphasis on the topic, and a small pause after the topic. These cues are not found on caseless direct objects in Right Edge Sharing strings, so we can conclude that topicalization movement is not at play, obviating the general immobility of caseless objects in Right Edge Sharing.

Thus, I believe LCA-based linearization is not a good fit for the Turkish data under discussion, since it necessitates exceptional evacuatory movement of empirically stationary and immobile direct objects. While certain aspects of this analysis could very elegantly explain our data, such as how the definition of *full domination* handling the ‘invisible’ nature of shared nodes in non-final conjuncts; some assumptions of this family of analyses are not a good fit.

3.3.2 Shortcomings of Bachrach and Katzir (2009, 2017)’s Cyclic Sister Node Linearization

Another multidominance analysis that is promising for our data is Bachrach and Katzir (2009, 2017)’s cyclic linearization protocol for multidominant Right Node Raising structures. They argue that Right Node Raising in English is derived via in-situ multidominance, and propose a sisterhood-based linearization algorithm which cyclically calculates precedence relationships between sister nodes. This analysis derives some word order constraints on Right Node Raising by encoding two mapping condition for sister nodes A and B: *edge alignment* which enforces that the final mapping starts with the first element of A and ends in the last element of B, and *conservativity* which enforces that the ordering of elements within A and within B are unchanged in the final ordering, as defined in (47).

(47) *Bachrach and Katzir (2017)’s Definitions and Machinery*

- a. *D-List*: “contains information regarding the linearization of the terminals dominated by X; the observed order of phonologically overt material follows the D-list of the root.”
- b. *Linearization Terminal Condition*: If X is a terminal, then the D-list for it is $\langle X \rangle$.
- c. *Linearization Mapping Condition (Final version, pg.17)*
 In ordering $A = \langle a_1, \dots, a_m \rangle$ to the left of $B = \langle b_1, \dots, b_n \rangle$ as daughters of the same mother, the following must hold of the mapping function f :
 - (i) **Edge Alignment**: $f(a_1) \leq f(b_1)$ and $f(a_m) \leq f(b_n)$
 - (ii) **Conservativity**: $f(a_1) \leq f(a_2) \leq \dots \leq f(a_m)$ and $f(b_1) \leq f(b_2) \leq \dots \leq f(b_n)$

This approach is flexible, because it allows certain mismatches of orders, and allows shared nodes to be linearized in-situ. However, it is too flexible, and makes wrong prediction that are not borne out in Turkish. Firstly, Bachrach and Katzir’s analysis is structurally defined and direction agnostic, predicting the same types of sharing to be possible at the right edge as well as the left edge; since *Linearization Mapping Condition* does not make reference to any direction, and they do not assume any inherent direction encoding for syntactic relations like c-command within the LCA, any configuration that is linearizable should be linearizable if the structure is mirrored. This prediction is not borne out in Turkish. While contiguous strings that occupy the right edge of conjuncts can result in *right edge* sharing, the mirror image *left edge* sharing is not grammatical in the language; sharing at the left edge is not equivalent to sharing at the right edge.¹⁰ See the attempted left-edge string sharing examples in (48-a) for nominal stem sharing in a coordination, (48-b) for nominal stem sharing outside of a coordination, and (48-c) & (48-d) for prefix sharing.

(48) *Turkish Left Edge Sharing*

¹⁰Ellipsis at the left edge has quite different properties. See Haegeman and Ihsane (1999, 2001); Weir (2012) for discussion.

- a. *kitap-çı ve ___-lık
book-seller and ___-thing
int'd: 'the bookseller and the bookcase'
- b. *Kitap-çı ___-lık-lar-ı sildi.
book-seller ___-thing-PL-ACC wipe-PAST
int'd: 'The bookseller wiped the bookcases.'
- c. *na:-mümkün ve ___-mükemmel
NEG-possible and ___-perfect
int'd: 'impossible and imperfect'
- d. *gayri-ihtiya:ri: ve ___-muntazam
NEG-intensional and ___-careful
int'd: 'unintensional and sloppy'

Additionally, this right vs. left edge sharing asymmetry is not restricted to Turkish. We can look at English, and see if sharing at the left edge of a coordination and non-coordination structures mirrors Right Edge Sharing. See (49) for right edge string sharing examples, as can be diagnosed by constituency and sub-word morphemic targets of sharing.

- (49) English Right Edge Sharing
- a. [His theory under-___], and [her theory over-**generates**]. (Wilder, 1997, 83)
 - b. [pre-___] and [post-**modern approaches**]

Crucially, such sharings are not acceptable at the left edge in English, as seen in (50).

- (50) *English Left Edge Sharing*
- a. ***[Over-estimations** [___-powered the sensible fiscal planning]], and they went bankrupt.
 - b. ***[[pre-industrial] technologies]** and **[[___-modern] approaches]**
 - c. ***[[over-generating] theories]** and **[[___-generalizing] heuristics]**

As we can see, the sharing of morphemes, especially non-constituent strings of morphemes, at the left edge is not acceptable, in opposition to the right edge, where not only Turkish, but English examples show that sub-parts of words and non-constituent string sharing is possible. In this way, Bachrach and Katzir (2009, 2017)'s formulation of the linearization not only overgenerates, but also misses the important empirical observation that the *right edge* is an essential part of string sharing, not only in Turkish, but in English, and potentially other languages.

3.3.3 Proposal: Sisterhood-based Linearization

Learning from the problems faced by the two families of approaches in sections §§3.3.1 and §3.3.2, I develop a post-syntactic linearization algorithm that combines the positive aspects, and aims to address the problems. I propose a cyclic bottom-up linearization algorithm that linearizes sister nodes with respect to each other, but inherently encodes the special role the *right edge* plays in constraining the acceptable

range of structures. This algorithm operates at the PF-interface on the fully complete output representation of narrow Syntax, not phase-cyclically during a syntactic-derivation like Bachrach and Katzir (2009, 2017). The *cyclicity* of the analysis refers to the fact that precedence between nodes is calculated cyclically at each projection. This mechanism also gives an explicit formalization in a multidominance framework to the frequently left-unaddressed problem of how linearization decides position for internally merged elements, cf. *copy deletion* for copy-theoretic frameworks. Position determination is necessary in any framework that allows internal merge and/or parallel merge, therefore I put forward a more explicit formal procedure to determine exponence position in a multidominance framework.

The design goals of this linearization algorithm are (i) deriving the Right Edge Restriction, and (ii) deriving the sharing of non-constituent strings of morphemes. More specifically, this algorithm does this by:

- *Parallel merged elements get linearized with respect to other elements conjunct/phrase-internally.*

This derives how the Right Edge Restriction requires parallel merged elements to be right peripheral within each non-final conjunct/phrase.

- *Parallel merged elements become **invisible** in non-final conjuncts/phrases when linearizing two sister nodes that contain these shared elements, i.e. when linearizing a node that dominates the shared nodes via multiple paths.*

This derives the fact that shared nodes are not spelled out in non-final conjuncts/phrases.

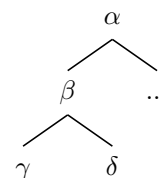
- *Since parallel merge of terminal nodes in the syntax is virtually unrestrained, multiple terminal nodes can be parallel merged within the structure independently.*

This derives the fact that a string of independent morphemes are linearizable as right-edge-shared without forming a constituent.

Firstly, this linearization algorithm greatly depends on the distinction between *domination* and *complete domination*, as is well attested in different approaches to linearizing multidominance strings (Gračanin-Yüksek, 2007; Bachrach and Katzir, 2009, 2017; Citko, 2017, 2018; Citko and Gračanin-Yüksek, 2021). I employ the definition of domination in (51).

(51) *Domination*: A node α dominates a node β iff (52)

- α is the mother of β , or
- α dominates a node γ such that γ dominated β , or
- $\alpha = \beta$.



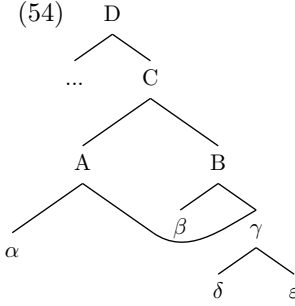
For example, in (52), α dominates β because α is the mother of β . α also dominates γ and δ because α dominates β , and β dominates γ and δ in turn. And finally, α also dominates α , because the definition in (51) is also reflexive.

In contrast, I propose a *complete domination* is stricter in cases of multidominance, and is calculated relative to a reference node that dominates all nodes under discussion. For α to completely dominate β with respect to a node γ , complete domination requires

that α dominate all mothers of β inside the structure dominated by the reference node γ . I formalize this in terms of paths, i.e. lists of nodes in dominance chains, in (53). In a structure where each node has one mother, completed dominance reduces to the more familiar *dominance*; but if a node α has multiple mothers, that node can be *dominated* by another node β and still not *completely dominated* by β due to the structural configuration. This distinction between dominance and complete dominance is crucial for linearizing parallel merged nodes.

- (53) *Complete Domination (proposed)*: A node α completely dominates a node β in reference subtree rooted by node γ iff
- γ dominates α and β ,
 - and every path from β to γ contains α .

For example, in (54), A does *not completely dominate* γ in D, despite A *dominating* γ , because γ has two mothers in D, namely A and B, and A does not dominate B. If we look at δ and ε , we see that A also does not completely dominate δ or ε , because there is a path for each – $\{D, C, B, \gamma, \delta\}$ and $\{D, C, A, \gamma, \varepsilon\}$ – that does not pass through A. In (54), however, C completely dominates γ , δ , and ε in D, because every path from γ , δ , and ε to D passes through the node C. Now, let us move on to the *Asymmetric Sister Linearization Principle* in (55).



- (55) *Asymmetric Sister Linearization Principle*:
Given a structure $[_C A B]$, all terminal nodes **completely dominated** by A in C, precede all terminals **dominated** by B.

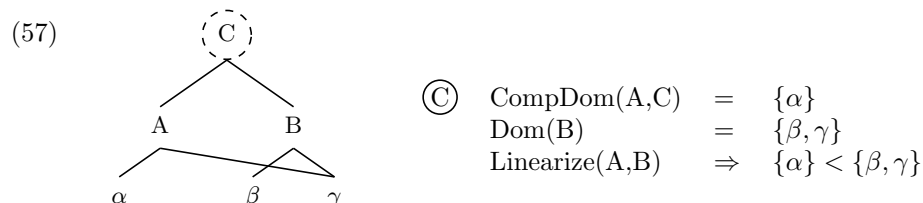
(55) linearizes two terminal nodes with respect to each other. In the most basic case, a left sister precedes a right sister. If the sisters are non-terminal nodes, then linearization orders the nodes that *completely dominated* by the left sister in the structure as preceding the nodes *dominated* by the right sister. I employ the following notation for terseness of representation in derivations.¹¹ Additionally, the target node of linearization in tree representations will be marked with a dashed circle for easy reference.

- (56) *Notation*
- $\text{Dom}(\alpha)$: the set of nodes α dominates.
 - $\text{CompDom}(\alpha, \beta)$: the set of nodes α dominates in subtree β .
 - $\text{Lin}(\alpha, \beta)$: the precedence relationship between sister nodes α and β according to the *Sister Linearization Principle* in (55).

The asymmetry in this linearization principle is vital for deriving the Right Edge Restriction. Firstly, when linearizing a non-terminal node C – which is encircled – with daughters A and B, such that A and B share an element, as in (57), the shared

¹¹ $\text{Dom}(\dots)$, $\text{CompDom}(\dots)$, and $\text{Lin}(\dots)$ respectively represent *dominance*, *complete dominance*, and *linearization*.

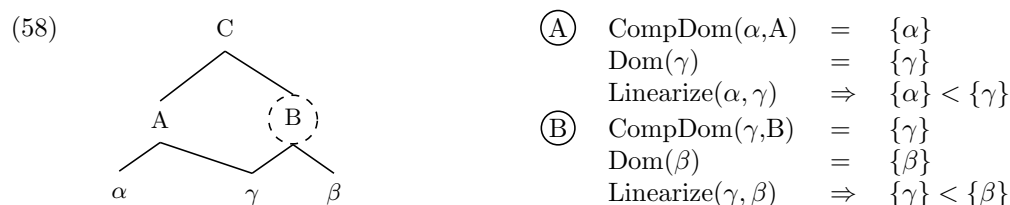
element γ is *invisible* inside the left sister A during the linearization calculation of node C, since it is not **completely dominated** by A in C, but *visible* in B since what matters for the right sister is that B **dominates** γ . Thus, all *non-shared* elements in A are linearized as preceding *all* elements of B, meaning that the shared element gets linearized corresponding to its position in B. This derives the *right edge* realization property of Right Edge Sharing.



Secondly, the definition of complete dominance in (53) crucially makes sure that shared nodes *do* get linearized with respect to other elements conjunct-internally – otherwise the position of the shared element would not need be rightmost in non-final conjuncts as we have empirically found; there would be no Right Edge Restriction if conjunct-internal position was not relevant to linearization.

Once we get to linearizing the root node, or any other node that *completely dominates* the parallel-merged nodes in the tree, as in (57), *only then* the parallel-merged nodes become ‘invisible’; we do not get any new ordering statements for shared nodes within non-final conjuncts, and the conjunct-internal orderings we got earlier in the linearization as well as the visibility of the parallel-merged node only in the final position can derive a consistent and full ordering that is governed by the Right Edge Restriction. This is thanks to the definition of complete dominance with respect to a given dominating node.

For example, while linearizing B in the hypothetical (58), the fact that γ has multiple mothers is irrelevant before the bottom-up linearization algorithm attempts to linearize node C, because when linearizing the contents of B, γ is completely dominated **in B**. As far as the linearization protocol is concerned, any structural relations further up the tree are not relevant at this point of linearization, and so shared elements are still *visible* for linearization at this point.



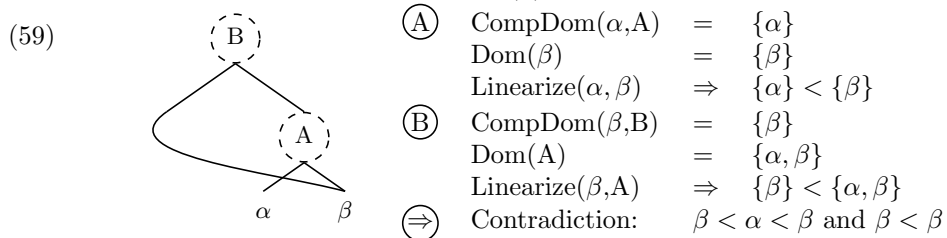
3.3.4 Formalizing Linearization of Movement as Internal Merge

Syntactic movement complicates linearization, since it involves either copies in the *copy theory* of movement, or nodes being internally merged using multidominance in a *multidominance theory* of movement. Since I assume a general multidominance

approach for syntax in this investigation, I focus on how to solve this problem for the latter theory. To this end, I propose that the PF-interface mapping has an operation, which I call *branch pruning*. It severs an internally-merged node from all-but-one of its mothers within the Syntax-PF interface representation. This is conceptually equivalent to *copy deletion* in copy-theoretic frameworks, and whether the internally merged node surfaces at its higher or lower position should be conditioned by language and construction-specific properties.

Note that the representation that undergoes *branch pruning* is a post-syntactic representation; we are not removing structure at Syntax. Removing some structural information should not be alarming at the PF-interface as this mapping in the end results in a linear phonological representation. The *pruning* of branches is in fact a necessary step for PF-linearization, as the PF must be told which position an internal-merged overt element occupies in the spelled-out string, and it discards a subset of direct dominance relation information. It is not a syntactic operation, and not all syntactic relations are relevant, nor should they all be visible for linear PF mechanisms.

Let's look at (59). When linearizing this structure, if no process modifies this structural configuration to get rid of the multiple positions, any moved node ends up linearized with respect to other nodes in *both* its base-generated position, and in its higher internal merged position, resulting in (i) a single exponent being required to both precede and follow certain nodes, and (ii) a single exponent preceding itself.



To solve this general problem in a multidominance framework, [Bachrach and Katzir \(2009, 2017\)](#) propose that firstly, precedence is reflexive, denoted \leq , such that a statement like $\alpha \leq \alpha$ is not a contradiction, and they propose that an exponent can occur exactly once in a precedence expression. This, in combination with a language-specific way of determining exponence in moved or base generated positions, which is unfortunately left implicit, makes the exponent invisible in the higher or base-generated position for calculating precedence statements for overt and covert movement. This implicitly makes positional information in certain positions invisible, or equivalently deletes positional information for moved nodes in all positions but the PF-overt position. I would like to argue that such an approach is functionally equivalent to proposing that, in the post-syntactic pre-linearization representation, branches from a mother to a node are severed or rendered invisible if there is a higher or lower position in the structure that is due to be spelled out in the language.

I make this implicit proposal explicit, and propose that a *branch pruning* process takes place before linearization within the syntax-PF interface. Branch pruning severs all branches from a node to its mothers except for the branch that is on either the

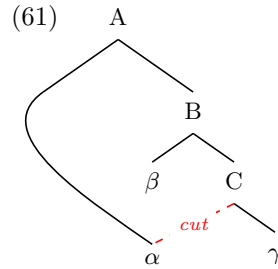
shortest or *longest* path, conditioned by whether the language or structure exhibits *overt* or *covert* movement.

(60) *Branch Pruning*

In a structure with a node α with mothers β_1, \dots, β_n such that β_1 dominates β_2, \dots , and β_{n-1} dominates β_n , sever the branch from each mother to α except for:

- a. *for covert movement*: β_x such that β_x is in the longest path to the root from α
- b. *for overt movement*: β_x such that β_x is in the shortest path to the root from α .

See (61) for an example branch pruning. Firstly, when the structure built in syntax is transferred to the PF interface. Then, a language specific *exponence determination protocol* decides which position is to be spelled out at PF – this protocol should contain parametric information such as *wh-movement* parameters, and potentially some universal exponence rules related to PF-LF mismatches with regards to covert movement. Based on these language-specific and universal principles, one position is determined to be the PF-overt position of multidominated objects.



After exponence position is determined, *branch pruning* calculates the various paths from internally merged nodes to the root node, and cuts branches accordingly. In (61) node α has two distinct paths to root node A: $\langle \alpha, C, B, A \rangle$, and $\langle \alpha, A \rangle$. Let's assume this is overt movement, i.e. the higher position is selected to expone α . Then, branch pruning cuts all but the shortest path, i.e. the branch between node α and node C, and leaves α as the daughter of A in the PF-interface representation. After pruning, this intermediate representation undergoes linearization, and then is transferred to PF proper for spell-out and phonological processes.

3.3.5 Deriving various String Sharing Patterns

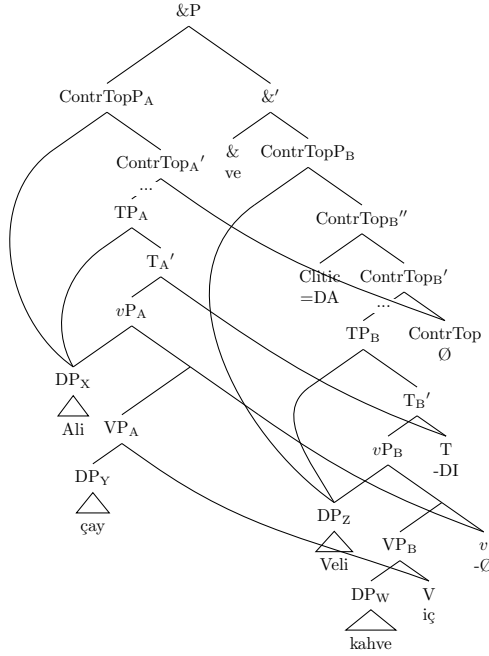
Now, let me demonstrate how this linearization algorithm can derive string sharing patterns. Example (62) shares a verb at the right edge. This is derived by parallel merge of the relevant verbal heads (V,v,T) with complements that are in different conjuncts, (63). Since they form a string of verbal heads that occupy the right edge of each conjunct, they obey the Right Edge Restriction, and thus are spelled out as at the right edge of the last conjunct.¹² When this structure is transferred to the PF interface, branch pruning severs branches from DP_X and DP_Z to mothers along

¹²In Turkish, finite past tense verbs undergo head-movement up to minimally T, participial predicates move up to Asp (Kornfilt, 1996; Kelepir, 2001; Zanon, 2014; Serova, 2019). These head-movement chains have been omitted from trees for simplicity. The resulting complex heads would still be right edge and not change the result for linearization.

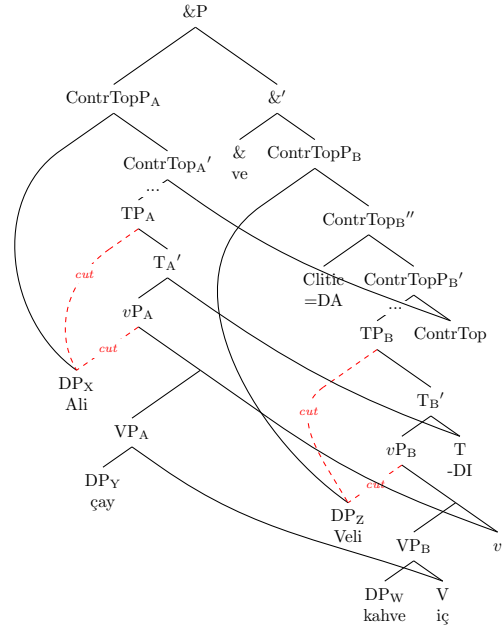
longer paths because these movements are overt in the language, and the resulting representation is then fed to linearization, which is schematized in (64).¹³

- (62) Ali çay __, ve Veli de kahve içti.
 Ali tea ___ and Veli CONTR.TOP coffee drink-PAST
 ‘Ali tea-drank, and Veli coffee-drank.’

(63) *Syntactic Structure*



(64) *Pre-linearization Representation*



Then, this intermediate representation is traversed bottom up, and at each node with exposed daughters a precedence statement is created. See (65) below for a table showing the linearization process.

¹³This algorithm is only sensitive to overt elements. I omit null elements from linearization statements.

Reference Node	Computation	⇒	Results
VP _A	CompDom(DP _Y , VP _A)	=	{çay}
	Dom(V)	=	{iç}
	Linearize(DP _Y , VP _A)	⇒	{çay} < {iç}
T _A '	CompDom(vP _A , T _A ')	=	{çay, iç}
	Dom(T)	=	{-DI}
	Linearize(vP _A , T)	⇒	{çay, iç} < {-DI}
ContrTopP _A	CompDom(DP _X , ContrTopP _A)	=	{Ali}
	Dom(ContrTopP _A)	=	{çay, iç, -DI}
	Linearize(DP _X , ContrTopP _A)	⇒	{Ali} < {çay, iç, -DI}
VP _B	CompDom(DP _W , VP _B)	=	{kahve}
	Dom(V)	=	{iç}
	Linearize(DP _W , V)	⇒	{kahve} < {iç}
T _B '	CompDom(vP _B , T _B ')	=	{kahve, iç}
	Dom(T)	=	{-DI}
	Linearize(vP _B , T)	⇒	{kahve, iç} < {-DI}
ContrTopP _B ''	CompDom(Clitic, ContrTopP _B '')	=	{=DA}
	Dom(ContrTopP _B '')	=	{kahve, iç, -DI}
	Linearize(Clitic, ContrTopP _B '')	⇒	{=DA} < {kahve, iç, -DI}
ContrTopP _B	CompDom(DP _Z , ContrTopP _B)	=	{Veli}
	Dom(ContrTopP _B)	=	{=DA, kahve, iç, -DI}
	Linearize(DP _Z , ContrTopP _B)	⇒	{Veli} < {=DA, kahve, iç, -DI}
&'	CompDom(&, &')	=	{ve}
	Dom(ContrTopP _B)	=	{Veli, =DA, kahve, iç, -DI}
	Linearize(&, ContrTopP _B)	⇒	{ve} < {Veli, =DA, kahve, iç, -DI}
&P	CompDom(ContrTopP _A , &P)	=	{Ali, çay}
	Dom(&')	=	{ve, Veli, =DA, kahve, iç, -DI}
	Linearize(ContrTopP _A , &')	⇒	{Ali, çay} < {ve, Veli, =DA, kahve, iç, -DI}

Going through bottom-up linearization through each nodes, and finally linearizing the daughters of &P, we get a fully ordered and consistent set of precedence relationships, which gives us the correct order:

$$\text{Ali} < \text{çay} < \text{ve} < \text{Veli} < =\text{DA} < \text{kahve} < \text{iç} < \text{-DI}$$

Let us see a multi-word sharing example in (66), where the PP *ev-e* ‘home-DAT’ is shared alongside the verb. In this case, a single *v* head heads two separate *vP* projections with separate subject DPs. This structure is generated when a single *v* head initially external merges with a PP argument to project a single *v'*, and then *parallel merges* with two separate DPs to project two *vP* projections. After branch pruning we get (67).

- (66) Ali geçen hafta __, ve Veli de bugün **eve döndü**.
 Ali last week and Veli CONTR.TOP today home-DAT return-PAST
 ‘Ali returned home last week, and Veli returned home today.’

Reference Node	Computation	\Rightarrow	Results
VP_A	CompDom(PP_A, VP_A)	=	{ev-e}
	Dom(V)	=	{dön}
	Linearize(PP_A, VP_A)	\Rightarrow	{ev-e} < {dön}
vP_A'	CompDom($Adverb_A, vP_A'$)	=	{geçen hafta}
	Dom(vP_A')	=	{ev-e, dön}
	Linearize($Adverb_A, vP_A'$)	\Rightarrow	{geçen hafta} < {ev-e, dön}
T_A'	CompDom(vP_A', T_A')	=	{geçen hafta, ev-e, dön}
	Dom(T)	=	{-DI}
	Linearize(vP_A', T)	\Rightarrow	{geçen hafta, ev-e, dön} < {-DI}
ContrTop P_A	CompDom($DP_X, ContrTopP_A$)	=	{Ali}
	Dom(ContrTop P_A')	=	{geçen hafta, ev-e, dön, -DI}
	Linearize($DP_X, ContrTopP_A'$)	\Rightarrow	{Ali} < {geçen hafta, ev-e, dön, -DI}
VP_B	CompDom(PP_B, VP_B)	=	{ev-e}
	Dom(V)	=	{dön}
	Linearize(PP_B, V)	\Rightarrow	{ev-e} < {dön}
vP_B'	CompDom($Adverb_B, vP_B'$)	=	{dün}
	Dom(vP_B')	=	{ev-e, dön}
	Linearize($Adverb_B, vP_B'$)	\Rightarrow	{dün} < {ev-e, dön}
T_B'	CompDom(vP_B', T_B')	=	{dün, ev-e, dön}
	Dom(T)	=	{-DI}
	Linearize(vP_B', T)	\Rightarrow	{dün, ev-e, dön} < {-DI}
ContrTop B''	CompDom(Clitic, ContrTop B'')	=	{=DA}
	Dom(ContrTop B')	=	{dün, ev-e, dön, -DI}
	Linearize(Clitic, ContrTop B')	\Rightarrow	{=DA} < {dün, ev-e, dön, -DI}
ContrTop P_B	CompDom($DP_Y, ContrTopP_B$)	=	{Veli}
	Dom(ContrTop B'')	=	{=DA, dün, ev-e, dön, -DI}
	Linearize($DP_Y, ContrTopB''$)	\Rightarrow	{Veli} < {=DA, dün, ev-e, dön, -DI}
$\&'$	CompDom($\&, \&'$)	=	{ve}
	Dom(ContrTop P_B)	=	{Veli, =DA, dün, ev-e, dön, -DI}
	Linearize($\&, ContrTopP_B$)	\Rightarrow	{ve} < {Veli, =DA, dün, ev-e, dön, -DI}
$\&P$	CompDom(ContrTop $P_A, \&P$)	=	{Ali, geçen hafta}
	Dom($\&'$)	=	{ve, Veli, =DA, dün, ev-e, dön, -DI}
	Linearize(ContrTop $P_A, \&'$)	\Rightarrow	{Ali, geçen hafta} < {ve, Veli, =DA, dün, ev-e, dön, -DI}

Through the derivation of precedence statements in (68), we get the complete and consistent ordering of elements that derives the attested string in (66):

Ali < geçen hafta < ve < Veli < =DA < dün < ev-e < dön < -DI

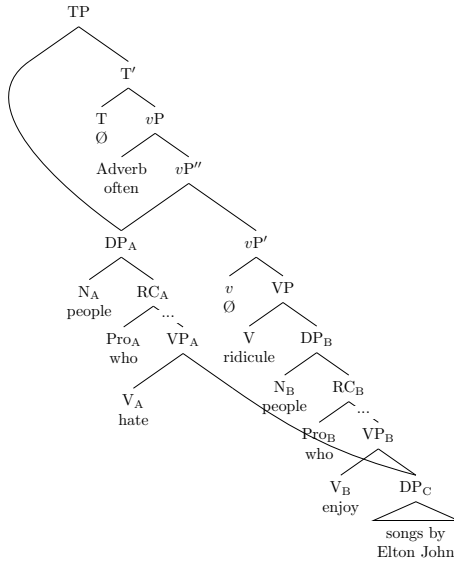
String Sharing examples which share a sub-word element are not different from the derivation above. The only difference is that instead of having a parallel merged phrasal node, they have parallel merged terminal node. I leave these cases as an exercise for the reader.

Thus, the proposed sister linearization algorithm can get the correct linearization for sharing of verbs, arguments, and single morphemes as long as they obey the Right Edge Restriction. For completeness sake, I will now also demonstrate that this algorithm is not constrained to coordinations, as the only relevant structural configuration is sister nodes. (69) below is a non-coordination example in English with sharing of *songs by Elton John* which is inside a relative clause island, necessitating that this example is not derived via across-the-board movement. There is no coordination in (69), nevertheless we have a similar structural parallel merge configuration; VP_A and VP_B share a node. Despite there not being conjuncts, there are still sister nodes in this structure that dominate VP_A and VP_B – DP_A and T' after movement, and DP_A and vP' in base-generated position – and therefore the sister linearization principles can still apply despite the lack of coordination. Since DP_A is moved to spec.TP via internal merge, it occupies two positions: it is both a sister to T' and a sister to vP' .

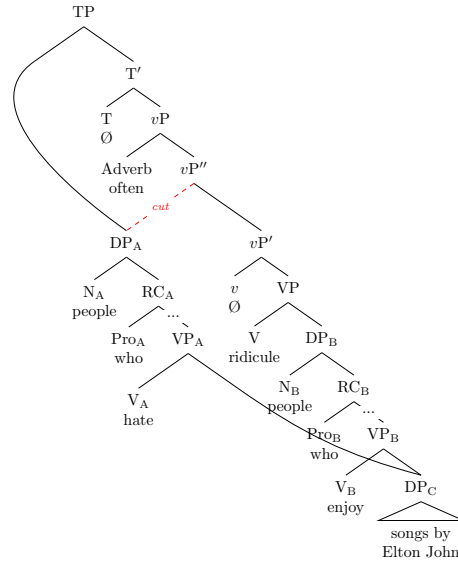
Since this movement is indeed overt in the pronounced string in English, the PF-Overtness Determination Protocol will mark the high position, and all other branches originating from DP_A to its mothers will be pruned, as in (71).

- (69) (Bachrach and Katzir, 2017, 5,ex.8) (=9-a)
 People who hate ___ often ridicule people who enjoy songs by Elton John.

(70) *Syntactic Structure*



(71) *Pre-linearization Representation*

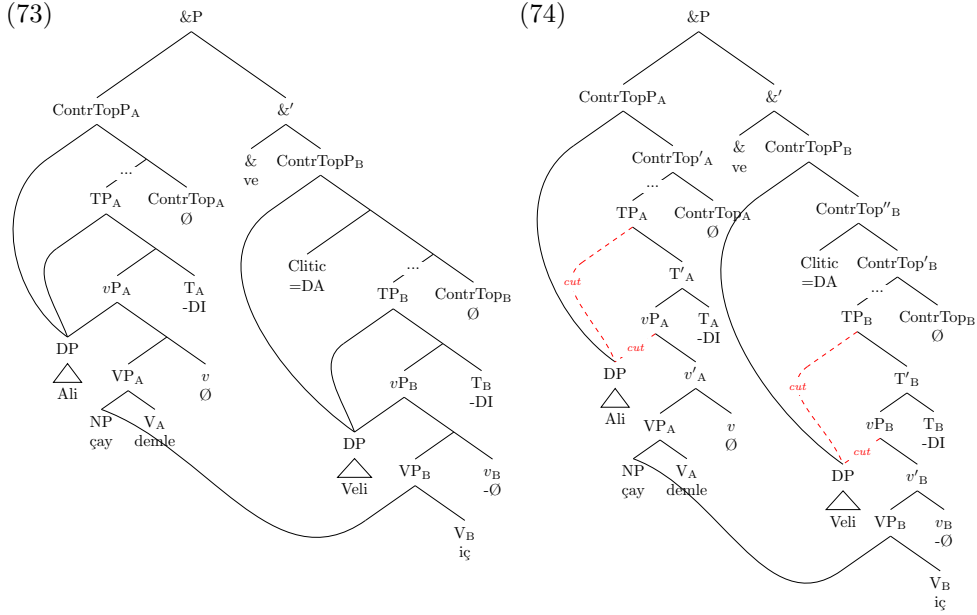


Crucially, this interface representation abides by the Right Edge Restriction; the shared node DP_C is rightmost in the two sisters containing it: it is rightmost in DP_A , and it is rightmost in the right sister T' . Thus, this structure is linearizable through the same algorithm, which I will not demonstrate for space; but, in short, the algorithm derives the correct ordering in English non-coordination sharing structures as well.

Finally, I wish to demonstrate how Right Edge Restriction violating structures are ruled out. To see this mechanism in action, let us look at the ungrammatical sharing attempt in (72) below. We can clearly see that the gap for the direct object 'çay' (tea) does not occupy the right edge position in the first conjunct, and thus this string is a direct Right Edge Restriction violation, so we therefore find that the sharing example in (72-b) is not acceptable.

- (72) a. Ali çay demle-di, (ve) Veli de çay iç-ti.
 Ali tea brew-PAST tea and Veli CONTR.TOP tea drink-PAST
 b. *Ali ___ demle-di, (ve) Veli de çay iç-ti.
 Ali brew-PAST tea and Veli CONTR.TOP tea drink-PAST

The structure of (72-b) corresponds to the tree in (73), where the direct object 'çay' (tea) is parallel merged between VP_A and VP_B .



Crucially, what goes wrong is that the non-right-edge position of NP ‘çay’ results in conflicting precedence statements. The non-right-edge position of NP in VP_A results in the precedence statement çay < demle, however, this clashes with the spellout of the parallel merged NP node in the second conjunct. When we get to linearizing ContrTopP_A and &’, all nodes dominated by &’, which crucially includes NP ‘çay’, is linearized as following all nodes completely dominated by ContrTopP_A, which includes V_A ‘demle’. Thus, NP ‘çay’ must both precede and follow V_A ‘demle’, which yields a contradiction.

(75)

Reference Node	Computation	⇒	Results
VP _A	CompDom(NP,VP _A)	=	{çay}
	Dom(V _A)	=	{demle}
	Linearize(NP,VP _A)	⇒	{çay}<{demle}
...
&P	CompDom(ContrTopP _A ,&P)	=	{Ali,demle,-DI}
	Dom(&’)	=	{ve,Veli,=DA,çay,iç,-DI}
	Linearize(ContrTopP _A ,&’)	⇒	{Ali,demle,-DI}<{ve,Veli,=DA,çay,iç,-DI}
Result	CONTRADICTION!!!		{çay}<{demle} AND {demle}<{...,çay,...}

Thus, we have seen that the Asymmetric Sister Linearization Principle can linearize coordinative and non-coordinative string sharing structures fully regardless of the number of nodes that are parallel merged as long as the position of the parallel merged nodes obey the Right Edge Restriction, i.e. occupy rightmost positions within each non-final sister node that dominates a parallel merged node. If a node occupies a non-right-edge position, the linearization results in contradictory precedence statements, which directly derives the Right Edge Restriction found in string sharing structures.

3.4 Deriving Right Edge Restriction for constituent sharing

The proposed linearization mechanism is not constrained to string sharing structures, it can also linearize constituent sharing structures and derive the Right Edge Restriction found in these constructions. In fact, despite the behavioral differences between the two Right Edge Sharing mechanisms, they are not too different structurally and linearizationally. String sharing has in-situ parallel merge without extraction, and constituent sharing has parallel merged elements undergoing extraction. The Asymmetric Sister Linearization Principle can handle both parallel merge and internal merge, and thus provide a unified analysis for the Right Edge Restriction regardless of the label.

Firstly, *constituent sharing* structures are also unacceptable when the gap position do not obey the Right Edge Restriction. In (76), we see that the shared object is not rightmost within the first conjunct or the final conjunct. Á priori, we can see that the direct object could not have undergone extraction out of the coordination, since it precedes the last conjunct predicate; if the object had extracted, it would have had to follow all last conjunct internal material. Additionally, the last conjunct predicate could not have also extracted to the right of the purportedly across-the-board extracted direct object, since that would not only be a direct violation of the *Coordinate Structure Constraint*, but also the predicate does not semantically scope over the coordination as would be expected in that position.

- (76) *Right Edge Restriction violation: preverbal sharing*
 *Ali demle-di, (ve) Veli de **çay** iç-ti.
 Ali brew-PAST and Veli CONTR.TOP tea drink-PAST

Thus, in essence, the object could not have undergone extraction in (76). Since *çay* is not rightmost within the first conjunct, the linearization algorithm will fail to linearize this structure. The non-rightmost position of the NP ‘*çay*’ results in conflicting conjunct-internal and intra-conjunct linearization statements: $\{\textit{çay}\} < \{\textit{demle}\}$ and $\{\textit{demle}\} < \{\dots, \textit{çay}, \dots\}$.

Now, let us consider if the direct object could have moved to the rightmost position within the first conjunct, and thus fulfilled the Right Edge Restriction? This is schematized in (77), where the shared direct object has conjunct-internally extraposed to the right edge in the first conjunct, thus obviating the linearization clash explanation. If this extraposition is possible, then we expect this string to be acceptable, but it is not.

- (77) *Right Edge Restriction violation: ungrammatical extraposition*
 *Ali _i demle-di _i, (ve) Veli de **çay**_i iç-ti.
 Ali brew-PAST tea and Veli CONTR.TOP tea drink-PAST

This observation can be explained by independent restrictions on word order and focus in Turkish previously discussed; the type of rightwards extraposition that can move caseless direct objects, which are otherwise immobile, require certain information structure and prosodic structures, and these are not the ones we find in Right Edge Sharing examples. Independent of sharing, rightwards extraposition of caseless

direct objects requires a specific focus configuration: the direct object surfaces in post-predicate position, where it receives a discourse *backgrounding* interpretation, and the predicate receives verum focus, as in (78) where *tea* is an established topic of the discourse, and agent B’s response deals with whether the event denoted by the predicate took place or not.

- (78) A: *Ali yine çay demlemeyi unuttu, di mi?*
 ‘Ali forgot to brew tea again, didn’t he?’
 B: Yok, Ali _i demledi [çay]_i... Ama güzel olmadı.
 No Ali brew-PAST tea but nice be-NEG-PAST
 ‘No, he *did* brew tea... But it did not turn out good.’

Extending this type of verum focus structure to our target construction, we can construct verum or polarity focus Right Edge Sharing examples of caseless direct objects, as in (79).

- (79) ?Ali ara sıra içer , Veli=yse asla içmez
 Ali sometimes drink-AOR Veli=CONTR.TOP never drink-NEG.AOR
çay.
 tea
 ‘Ali *sometimes drinks* (tea), but Veli *never drinks* tea.’

However, crucially, (79) has a different structure than the potential Right Edge Restriction violations that are under discussion; if the shared element can be extraposed conjunct-initially, it can also be extraposed across-the-board, as noted in the literature Ross (1967); Wilder (1999); Sabbagh (2007). In this case, the gaps in (79) are rightmost, and thus, both the Right Edge Restriction and the present linearization proposal correctly predict that (79) is a possible structure. The important question for evaluating the present proposal is whether rightward extraposition *only in the first conjunct* as in (80) is predicted to be grammatical contra the fact that they are empirically unacceptable sentences.

- (80) *Verum focus and postverbal backgrounding in only first conjunct: ✗ (= (18-b)–(18-c))*
 a. *Ali _i demle-di [çay]_i, (ve) Veli de **çay** iç-ti.
 Ali brew-PAST tea and Veli CONTR.TOP tea drink-PAST
 b. *Ali demle-di , (ve) Veli de **çay** iç-ti.
 Ali brew-PAST and Veli CONTR.TOP tea drink-PAST
 int’d: ‘Ali tea-brewed, and Veli tea-drank.’

In fact, the minimal pair in (80) gives us our answer: rightwards extraposition of caseless direct objects in only the first conjunct are not acceptable independent of sharing. This extraposition and the information structure associated with this configuration is not compatible with a non-verum-focus configuration in other conjuncts; if one conjunct undergoes this verum focus and backgrounding movement, there is a parallelism requirement for all conjuncts within the coordination, and thus both the unshared

control sentence (80-a) and the sharing structure in (80-b) are ruled out by independent information structure constraints. And thus, no special amendments are needed to the linearization proposal to rule out Right Edge Restriction violating conjunct sharing structures, since they are ruled out by independent means.

In summary, the linearization proposal does not distinguish between the *string sharing* and *constituent sharing* classes of Right Edge Sharing; it linearizes both structures in the same manner, and through derives the Right Edge Restriction in both classes from the same set of linearization principles. The Asymmetric Sister Linearization Principle provides a unified analysis of the Right Edge Restriction across both subclasses of Right Edge Sharing.

4 Conclusion

In this paper, I have argued that a descriptive natural class of strings which I call *Right Edge Sharing*, which is a filler-gap dependency that defined by the descriptive constraint called the *Right Edge Restriction* is actually not a uniform class based on evidence from Turkish. I have argued that these constructions are composed of two groups that are generated by different mechanisms and show different behavior in Turkish: the *constituent-sharing* variety is generated by syntactic rightward extraposition movement resulting in across-the-board extraction, while the *string sharing* variety is generated by the specific way post-syntactic linearization principles operate on syntactic structures that contain parallel merged elements. To this end, I have argued that previous in-situ parallel merge accounts fail to account for the full set Turkish patterns, and presented an alternative sisterhood-based linearization algorithm that derives the *string sharing* patterns for the latter post-syntactic variety. Additionally, I have argued that such a linearization can apply to the *constituent-sharing* variety as well, and thus provides a unified linearization framework that handles both types of sharing.

The data and analysis presented also makes some contributions to current debates and raises further research questions. Firstly, this investigation joins a larger set of work that investigates contradictory patterns and heterogenous analyses of Right Node Raising and related phenomena (Barros and Vicente, 2011; Citko, 2017; Belk et al., 2023).

Secondly, this investigation raises questions about a potential universal: the primacy of the *right vs left* edges. I have argued that the Right Edge Restriction, specifically in Turkish, but also long known to operate in English as well, treats the left and right edges asymmetrically. The proposed analysis formalizes this as an inherent asymmetry in how linearization treats left and right sisters in Syntax-PF mapping – one is relevant for *domination* while the other for *complete domination* – but what derives this asymmetry on a deeper level? Whether this edge asymmetry is specific to Turkish or universal is an open question worth examining more in detail. One diagnostic and empirical contribution of this investigation for further inquiry is the properties of *string sharing*: We can look for mirror image languages which show string sharing-like properties such as iterability, non-constituent targets, and island insensitivity at the *left edge*, or at both edges. If we find variation on this point, it would open a

new range of questions about the character of linguistic variation parameters, and the uniformity of abstract formal processes like linearization. If, instead, we find that the *right edge* is special for sharing universally, we have a fundamental question to answer: *Why does linearization favor the right edge?*

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