

Raising and head-external relatives in Atchan*

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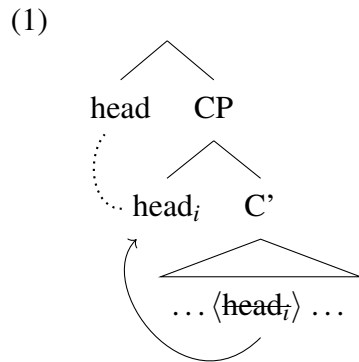
Abstract This paper argues that Atchan (Kwa; Côte d'Ivoire) exhibits raising and head-external relatives. I argue that the two relative clause derivations in Atchan must be separate and do not reflect the cross-linguistically common raising/matching ambiguity: in particular, the non-raising derivation is a head-external one, and Atchan lacks matching-derived relatives. Evidence for two structures comes from negative concord licensing and extraposition, while evidence for the head-external derivation comes from idiom interpretation and word-order possibilities given the complex relative-clause periphery of Atchan. The latter piece of evidence relies a pattern of relative-clause subject displacement in Atchan, which is shown to force a raising derivation. These phenomena in Atchan serve as evidence for the relevance of the head-external derivation cross-linguistically and, in particular, show that hybrid or other matching-based accounts of relative-clause connectivity cannot be applied universally.

Keywords: relative clauses, connectivity, raising, head-external, idiom interpretation

1 Introduction

In the landscape of relative-clause analyses, matching analyses are especially powerful. An inherent compromise between raising analyses (which posit a representation of the head internal to the relative clause) and head-external analyses (which posit a head that originates outside the relative clause), matching analyses include both internal and external representations of the head, as schematized below (Chomsky 1965, Sauerland 1998, 2000, 2003, a.o.):

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On a traditional matching analysis, the internal head is deleted under identity with the external head (with the identity relation shown here via the dotted line). Importantly, the external head is linked to relative-clause-internal positions not via a movement chain but, rather, via an identity relation.

It has long been noted that many languages display both raising and traditional matching relatives (English: Bhatt 2002, Sauerland 2003, Hulsey & Sauerland 2006; Bulgarian: Krapova 2010; Georgian: Foley 2013; Hebrew: Sichel 2018; a.o.). In the proper environments (when the head is required to be interpreted either within or outside of the relative clause), a raising and matching structure, respectively, can be forced (Carlson 1977, Bhatt 2002, Hulsey & Sauerland 2006). A class of what I refer to as hybrid analyses¹ exploits the dual representation of the head to derive this pair of structures (Munn 1994, Citko 2001, Krapova 2010, Salzmann 2019, Cinque 2020). The core of a hybrid analysis is a structure like (1), but hybrid analyses allow for a more complex deletion rule. On a hybrid account, when circumstances are right, either head can delete on identity with the other. If the internal head deletes, we are left with a traditional matching structure. In contrast, if the external head deletes, we derive a raising structure—i.e., the surface head was base-generated inside the relative clause.

At their core, hybrid accounts provide the most elegant way of deriving this apparent raising-matching ambiguity from a single underlying structure. On the basis of their empirical coverage and theoretical simplicity, hybrid accounts have been proposed to provide great cross-linguistic coverage. Two recent accounts in this vein are especially noteworthy. First, Salzmann (2019) shows that a hybrid account correctly derives a range of reconstruction effects in English and German.² As a

¹ These accounts are sometimes also termed “matching” accounts. For consistency, I refer to them as *hybrid* accounts throughout, using *matching* to refer to the account with a unidirectional deletion mechanism.

² To be clear, Salzmann himself does not make a claim of universality.

stronger claim, Cinque (2020) proposes that a single hybrid account is universal and can derive the attested cross-linguistic range of relative-clause structures.

In this paper, I analyze original fieldwork data from Atchan (Kwa, Côte d’Ivoire) with a pair of goals. My first aim is to show that hybrid accounts cannot be applied universally. I show that, while Atchan does exhibit multiple kinds of relative-clause structures, a hybrid account cannot capture the Atchan data. More fundamentally, I challenge the view that matching is a kind of default structure in relative clauses. Instead, I argue that Atchan has raising and head-external relatives, but no matching relatives.

This paper will leverage the fact that, in addition to typologically-common post-nominal relative clauses (2a), Atchan permits relative clause subjects to surface at the left edge of the relative clause, to the left of the head (2b):

- (2) a. [ɓje_j k^hé aká pɔ t_j] é-ɓɔ̃
 woman COMP A. love PROG-be.pretty
 ‘The woman Aka likes is pretty.’ (kou_20220307)
- b. [[aká_i] ɓje_j k^hé a_i pɔ t_j] é-ɓɔ̃
 A. woman COMP EXTR love PROG-be.pretty
 ‘The woman Aka likes is pretty.’ (kou_20220307)

These dislocated subjects, like *aká* in (2b), are circled throughout the paper. I show that relative clauses like (2a) are ambiguous between two possible structures, one raising and one non-raising. The presence of the dislocated subject in relative clauses like (2b) disambiguates towards one structure, the raising structure. I propose that this results because the dislocated occupies a position in the relative clause’s periphery, forcing a CP-internal, raising-derived head in (2b). I additionally argue that the non-raising structure available in (2a) is not a matching structure but, rather, a head-external one; hybrid and other matching-involving analyses make incorrect empirical predictions.

This paper proceeds as follows. In Section 2, I introduce the Atchan language and provide initial data on relative clauses and subject dislocation. In Section 3, I demonstrate that relative clauses with no subject dislocation are ambiguous between a raising and a non-raising structure. Further, I show that the presence of the dislocated subject disambiguates towards the raising parse. In Section 4, I focus on the surface position of the dislocated subject in Atchan relative clauses, proposing that it surfaces in the relative clause’s periphery. In Section 5, I return to the question of what the non-raising structure in Atchan relative clauses is. Here, I argue that the Atchan facts are best captured on an analysis on which there are no matching relatives.

2 Language introduction

2.1 Atchan language background

Atchan (also called Ébrié; ISO:ebr) is a Kwa language spoken by an estimated 150,000 Tchaman people in southeastern Côte d'Ivoire (Dido 2018). The city of Abidjan, Côte d'Ivoire's economic capital and largest city, was built on the traditional homelands of the Tchaman people; today, the majority of the Tchaman villages are contained within the city of Abidjan. Due to the villages' geographical location, the Tchaman people have been in long-term, sustained contact with speakers of French; the vast majority of Atchan speakers, including all of my consultants, are bilingual in Atchan and French. As is common in West Africa, many Atchan speakers also speak additional Ivorian languages.

The Atchan data discussed in this data come from elicitation conducted with six main Atchan speakers in 2021-2024, in a combination of remote and in-situ work. These speakers live in two villages, Anono and Blockhauss, both of which are located within the city of Abidjan. All data from original fieldwork are transcribed in IPA, with H tones marked and L tones unmarked. Original data is presented with a code corresponding to the consultant(s) whose judgment is reported and the date of the elicitation session. Recordings and notes from the Atchan Language Project, including elicitation notes, are archived in the California Language Archive (Doko et al. 2021).

This paper also includes occasional examples from two other sources. Cited examples from Dido's (2018) descriptive grammar of Atchan follow the orthography used in that thesis, which marks M and L tones in addition to H tones. Glossing of those examples has been modified for consistency. The paper additionally cites examples from the New Testament translation into Atchan (Loba & Biekre 1997). These examples are presented with the translation orthography and IPA, and the English free translations are my own. Glossing in this paper follows the Leipzig glossing conventions, with the following additions: CM class marker, EXTR subject extraction reflex, INAN inanimate, PRO.INDEF indefinite/impersonal pronoun.

2.2 Relativization, subject dislocation, and A'-movement in Atchan

In this section, I present basic data to introduce relativization and subject dislocation in Atchan, and I additionally argue that both processes involve movement.

2.2.1 Relativization and movement

Atchan exhibits SVO word order (3). Relative clauses, in their most basic form, are exemplified by (4) below. They include the relative head at the left edge of the clause, followed by the optional morpheme $k^{h\acute{e}}$:

- (3) $m\tilde{e}$ $\eta\tilde{e}$ $n\epsilon$
 1 SG love 3 SG.OBJ
 ‘I know him.’ (chr_mar_20220707)

- (4) $m\tilde{e}$ $mp\textcircled{\circ}$ [$s\epsilon$ ($k^{h\acute{e}}$) ϵ $\eta\tilde{e}$]
 1 SG love man COMP 2 SG.SBJ know
 ‘I love the man that you know.’ (yap_20220929)

I take $k^{h\acute{e}}$ to be a complementizer. A homophonous element can also be found in other structures like conditional clauses:

- (5) [$k^{h\acute{e}}$ $m\tilde{e}$ $m\acute{o}$ $m\acute{o}$ pra $g\textcircled{b}a$ $p^{h\textcircled{\circ}}$], \acute{a} $mp\textcircled{\circ}$ $m\tilde{e}$
 COMP 1 SG take hand pet dog body 3 SG.SBJ love 1 SG
 ‘If I pet a dog, it loves me.’ (hre_20230630)

A number of pieces of evidence support an analysis on which relativization in Atchan involves A'-movement of the head. First, the locality profile of relativization is typical of A'-extraction. For example, a head can be relativized out of an embedded clause:

- (6) $m\tilde{e}$ $\eta\tilde{e}$ [$\boxed{aka_i}$ $\textcircled{b}je_j$ $k^{h\acute{e}}$ a_i $\textcircled{b}u$ $k\acute{a}k\acute{o}l\acute{e}$ a_j $\eta\tilde{o}$]
 1 SG love A. woman COMP EXTR think COMP EXTR be.pretty
 ‘I love the woman that Aka thinks is pretty.’ (yap_20220929)

Here, the head ‘woman’ is associated with a thematic position in the embedded clause in an A'-like locality profile. (In this example, ‘Aka’, the subject of ‘think’, is dislocated to the pre-head position.)

Relativization in Atchan additionally obeys island constraints. For example, it obeys the Coordinate Structure Constraint. As is shown below, relativizing one disjunct in a coordinate structure results in ungrammaticality:

- (7) * $m\tilde{e}$ $mp\textcircled{\circ}$ [$lep^{h\acute{a}}_i$ $k^{h\acute{e}}$ $kati$ wu [$\epsilon lize$ $léka$ t_i]]
 1 SG love person COMP K. see L. or
 Intended: ‘I love the person_i who Katie saw Lindsay or \emptyset_i .’
 (kou_20240310)

Relativization also obeys the Complex NP Constraint. That is, relative clauses are islands for further relativization:

- (8) a. mē mpɔ [jíɔmã_i k^hé_i a_i hē ná]
 1SG love woman COMP EXTR cook meat
 ‘I love the woman who cooked the meat.’
- b. [é-ná_j k^hé_i jíɔmã hē t_j] e-só_i ɲó_i
 CM-meat COMP woman cook PROG-sense good
 ‘The meat that the woman cooked smells good.’
- c. * [é-ná_j k^hé_i mē mpɔ [jíɔmã_i k^hé_i a_i hē t_j]]
 CM-meat COMP 1SG love woman COMP EXTR cook
 e-só_i ɲó_i
 PROG-sense good
 Intended: ‘The meat such that I love the woman who cooked it smells good.’
 (kou_jea_20220712)

The crucial data is in (8c), where (é)-ná ‘meat’ cannot be extracted from the relative clause.

Additional evidence for a movement-based derivation of relativization in Atchan comes from Strong Crossover. As is shown below, the head of a relative clause cannot bind a pronoun in subject position:

- (9) ʒulian nō a di [lep^hã_i k^hé_i é_i mpɔ t_i]
 J. FOC EXTR COP person REL 3SG.SBJ.PFV love
 ‘Julianne is a person_i who she_{k,*i} loves.’ (yap_20220805)

The sum of this evidence, pairing island-sensitivity and crossover effects, supports a view on which relativization in Atchan involves (A’-)movement.

For the remainder of this paper, it will be important to know that the derivation of *all* relative clauses in Atchan involves movement. Specifically, in the next section we will consider the effects of two manipulations on relative clause structure: subject dislocation and extraposition. Both relative clauses that involve subject dislocation and those that involve extraposition can be shown to have a derivation that involves movement. This is illustrated below, where we see that subject-dislocation relatives (10a) and extraposed relatives (10b) are sensitive to the Coordinate Structure Constraint:

- (10) a. * mē mpɔ [[kati_i] lep^hã_j k^hé_i a_i wu [elize léka t_j]]
 1SG love K. person COMP EXTR see L. or
 Intended: ‘I love the person_i who Katie saw Lindsay or \emptyset _i.’
 (20240310_kou)
- b. * mē hrɔmã [lep^hã_j] mánji [k^hé_i kati wu [elize léka t_j]]
 1SG hide person behind COMP K. see L. or
 Intended: ‘I hid behind the person_i who Katie saw Lindsay or \emptyset _i.’
 (20240310_kou)

This data can be compared to the ‘standard’ relative clause data in (7): all kinds of relative clauses in Atchan obey the Coordinate Structure Constraint.

One additional language-specific diagnostic that also supports a movement-based derivation of relative clauses is the morphology of resumption. Atchan morphologically distinguishes resumptive elements that involve movement dependencies from those that do not. I will discuss those two characteristic patterns in the next section before we turn to relative-clause subject dislocation.

2.2.2 Two types of resumption in Atchan

It is quite common for languages, including many African languages, to morphologically distinguish resumptive elements generated via movement dependencies from those generated via base generation. Recent work has shown that this pattern occurs in Hebrew, Igbo, and Swahili, among other languages (Sichel 2014, Scott 2021, Georgi & Amaechi 2022). In this section, I briefly argue that Atchan is such a language. The upshot of this discussion is that resumption can provide an additional language-specific diagnostic for movement, which will prove valuable when we turn to subject dislocation in the next section.

First, we can observe that A’-constructions in Atchan differ in regards to island-sensitivity: matrix topicalization patterns differently from all other A’-constructions. We saw earlier that relativization obeys island constraints. The same holds of *wh*-movement/focus. This is illustrated below, where extracting a *wh*-item out of a coordinate structure (11a) and out of a relative clause (11b) is ungrammatical:

- (11) a. * t^hábẽ_j nõ ε fá wu [ʒulian léka t_j]
 who FOC 2SG FUT see J. or
 Intended: ‘Who_i will you visit Julianne or ∅_i?’ (yap_20220805)
- b. * bí_j nõ mẽ jẽ [se_i khé a_i di t_j]
 what FOC 1SG know man COMP EXTR eat
 Intended: ‘What_j is such that I know the man who ate it_j?’
 (kou_jea_20220402)

This parallel in island-sensitivity suggests that both relativization and focus/*wh*-movement have derivations that involve movement.

Matrix topicalization, however, does not obey island constraints. For instance, relative clauses do not form islands for topicalization:

- (12) ʒulian_j, mẽ mpɔ [se_i khé é_j mpɔ t_i]
 J. 1SG love man COMP 3SG.SBJ.PFV love
 ‘Julianne_j, I love the man that she_j loves.’ (kou_jea_20220802)

This island-insensitivity suggests that matrix topicalization does *not* have a movement-based derivation. This is unsurprising, since topics are often generated in the matrix-

clause periphery cross-linguistically (Cinque 1977, Aissen 1992, Georgi & Amaechi 2022, a.o.).

This contrast in island-sensitivity in Atchan A'-phenomena additionally maps onto a difference in the form of resumptive elements. These contrasts are summarized in Table 1 and discussed below.

	Movement resumption	Base-generation resumption
Subject	a EXTR / \emptyset	\tilde{a} 3SG.SBJ / $\acute{\epsilon} \sim \acute{\eta}$ 3SG.SBJ.PFV
Direct object	\emptyset	$\eta k \epsilon \sim n \epsilon$ 3SG.OBJ

Table 1 Movement- and base-generation-pattern resumptive forms in subject and direct-object position. The contrasting forms in direct-object base-generation resumption reflect dialectal variation, as do the two 3SG.SBJ.PFV forms. Meanwhile, the contrast between 3SG.SBJ and 3SG.SBJ.PFV reflects aspectual variation, as does the contrast between [a] and \emptyset in movement-pattern subject resumption. All movement-pattern resumption subject examples in this paper involve resumptive [a].

One contrast emerges in direct object resumption.³ Here, topics are resumed (13), but relative-clause heads and *wh*-items cannot be resumed (14):

- (13) $\dot{m}\dot{m}\dot{o}\dot{j}\dot{o}-\dot{a}_i$, $\dot{a}k\dot{a}$ $w\dot{u}$ $\eta k \acute{\epsilon}_i$
 Mobio-TOP Aka see.PFV 3SG.OBJ
 ‘As for Mobio, Aka saw him.’ (Dido 2018:308a)
- (14) a. $t^h\acute{a}b\acute{\epsilon}_i$ $n\tilde{o}$ ϵ wu $*(n\epsilon_i)?$
 who FOC 2SG.SBJ see 3SG.OBJ
 ‘Who did you see?’ (kou_20240310)
- b. $m\tilde{\epsilon}$ $mp\dot{o}$ [$lep^h\tilde{a}_i$ $k^h\acute{\epsilon}$ ϵ wu $*(n\epsilon_i)$]
 1SG love person COMP 2SG.SBJ see 3SG.OBJ
 ‘I love the person you saw.’ (kou_20240310)

This establishes an initial contrast in the forms of resumptive elements between base-generation and movement-generated resumptive elements.

More important for us as we move forward is the form of resumptive elements in subject position. In matrix topicalization, subject topics are resumed by standard

³ In Jarvis 2024a, I investigate the pronominal system further and argue that the element I gloss here as 3SG.OBJ is actually better analyzed as a separate obviative pronoun. However, this distinction is not relevant to us here.

animacy-matching pronouns (15). By contrast, in movement dependencies, subjects are resumed by reduced forms (16):

- (15) àká-è_i, [í_i] wū òmòjò
 Aka-TOP 3SG.SBJ.PFV see Mobio
 ‘As for Aka, she saw Mobio.’ (Dido 2018:309a)
- (16) a. t^hábē_i nō { [á_i] la / *á_i na } òkã áká k^húmbrẽ
 who FOC EXTR pray 3SG.SBJ pray God day all
 ‘Who prays every day?’ (kou_20240310)
- b. katí_i nō { [á_i] la / *á_i na } òkã áká k^húmbrẽ
 K. FOC EXTR pray 3SG.SBJ pray God day all
 ‘It’s Katie who prays every day.’ (kou_20240310)

In the movement dependencies in (16), we see that the subjects must be resumed by the element [a], glossed here as EXTR; they cannot be resumed by ordinary 3SG pronouns.⁴ (The tone of the reduced element [a] varies depending on aspect.) While a full analysis of this reduced form is beyond the scope of this paper,⁵ it is clear that the form of resumptives again covaries with the derivational structure involved: base-generation dependencies look different from movement-based dependencies. In the next section, we will use this contrast in resumptive forms as an additional diagnostic for the structure involved in Atchan relative-clause subject dislocation.

2.2.3 Subject dislocation and movement

Now, we return to subject dislocation in Atchan relative clauses. In §2.2.1, I showed that relativization in subject-dislocation relatives involves movement. In this section, I will argue that subject dislocation itself also involves movement.

Notably, in my data *only* subjects can occupy the pre-head position. Attempting to dislocate non-subject items, even with contextual support, yields ungrammaticality, as shown below:

- (17) [aká_i] òje_j k^hé_i a_i pò t_j] é-ò
 A. woman COMP EXTR love PROG-be.pretty
 ‘The woman Aka loves is pretty.’
 #‘The woman who loves Aka is pretty.’ (kou_20220307)

From this example, we can see that subject displacement differs from matrix topicalization in two ways. First, as shown in (13), non-subject items can be matrix-

⁴ The nasalization of [la] to [na] in these examples is a phonologically-predictable process due to the presence of a singular nasal subject pronoun.

⁵ See Jarvis 2024b for more on resumption in Atchan, including a discussion of this [a] element.

clause topics. However, the subject-only restriction is evidently inviolable for subject dislocation. A second way in which subject displacement differs from matrix topicalization is in resumption. As shown in the above examples, subject dislocation in Atchan leaves behind the characteristic movement-pattern [a]-resumptive. This provides language-specific evidence that they, like relative-clause heads and unlike matrix topics, are derived via movement.

Because only subjects can undergo subject displacement, it is difficult to test other standard diagnostics for movement: island effects that require long-distance extraction, for instance, will be uninformative. The closest possible example we can construct involves a coordinated subject. It is not possible to displace one disjunct in a coordinated subject:

- (18) a. mē mpɔ [á-já k^hé [espé léka ivo] jã]
 1SG love CM-tree COMP E. or Y. cut
 ‘I love the tree that Espérance or Yves cut.’ (yap_20220929)
- b. *mē mpɔ [espé_i já k^hé [t_i léka ivo] jã]
 1SG love E. tree COMP or Y. cut
 Intended: ‘I love the tree that Espérance or Yves cut.’ (yap_20220929)

Here, (18a) is a baseline sentence with no subject dislocation and a coordinated subject. The crucial data is in (18b), where we attempt to dislocate one of the disjuncts, resulting in ungrammaticality. This data is consistent with a movement-based view of relative-clause subject dislocation in Atchan.⁶

3 Relative-clause connectivity in Atchan: Raising and non-raising

At this point, having established that relativization in Atchan involves movement, we are prepared to turn to relative-clause connectivity. The connectivity problem (so named by Bianchi (2002)) centers on the fact that the head in a relative clause serves two roles: it surfaces at the edge of the relative clause but is intuitively connected to a lower thematic position inside the relative clause. The question of how the head obtains its surface position and maintains this lower connection is the center of debates concerning relative clause connectivity.

In this section, I focus on distinguishing between two analytical possibilities: raising and non-raising structures. I overview these two structures and the connectivity effects used to distinguish them in Section 3.1. From there, I apply diagnostics based on negative concord items and extraposition in Section 3.2 to show that both

⁶ Of course, it is possible to imagine approaches to subject dislocation on which a disjunct is insufficiently local for displacement to occur: it is possible that (18b) might be ruled out for reasons unrelated to the Coordinate Structure Constraint *per se*.


raising and non-raising relatives exist in Atchan. In Section 3.3, I discuss dislocated subjects in Atchan relative clauses and show that the presence of subject dislocation forces a raising structure. The ultimate picture that emerges in this section is reminiscent of the commonly-held view of English and numerous other languages: Atchan relative clauses are often ambiguous between raising and non-raising parses, though certain circumstances force one or the other.

3.1 Raising and non-raising analyses

Three classic approaches to the connectivity question are the raising analysis, the matching analysis, and the head-external analysis. Here, I introduce these three accounts in more detail.

3.1.1 Raising analysis

On the raising analysis, the way that the head establishes a connection to a lower thematic position is by moving from that lower position to the higher one where it surfaces (Schachter 1973, Vergnaud 1974, Kayne 1994, Bianchi 1999, Bhatt 2002). This approach is schematized below:

$$(19) \quad [\text{head}_i [\dots \langle \text{head}_i \rangle \dots]]$$


Note that raising accounts differ as to where, exactly, the raising head moves to. On some accounts, the head remains within the CP (Kayne 1994, Bianchi 1999, a.o.), while on others the head reprojects, leaving the CP (Bhatt 2002, a.o.). A second dimension of variation across previous analyses is the size of the moving head (NP vs. DP). We will take up both of these questions for Atchan in §4.


Raising analyses have been proposed for many languages. Notably, this includes a number of other Niger-Congo languages, including the Kwa language Akan (Saah 2010), Bùlì and other Gur languages (a raising-like structure: Hiraiwa 2005, Bodomo & Hiraiwa 2010, Hiraiwa et al. 2017), and the Gbe language Gungbe (Aboh 2005). Each of these languages has been proposed to have relative clauses that are exclusively generated via raising.

3.1.2 Non-raising analyses

A different kind of answer to the connectivity problem holds that the head that we see in a relative clause is base-generated in its surface position. On such a view, which I will refer to throughout this paper as a *non-raising* view, the overt head is

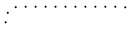

base-generated outside the relative clause.⁷ To establish the head’s apparent connection with a lower thematic position inside the relative clause, an additional element undergoes A’-movement inside the relative-clause CP. Non-raising analyses can be split into two major types, head-external analyses and matching analyses.

On the head-external analysis (Partee 1975, Chomsky 1977), the head is base-generated outside the relative clause. Within the relative clause, an operator or relative pronoun undergoes movement to the clause edge, as is schematized below:

$$(20) \quad [\text{head} [_{\text{CP}} \text{Op}_i [\dots \langle \Theta_{\text{Pr}} \rangle \dots]]]$$


The defining characteristic of a head-external relative is that there is no representation of the head within the relative clause.

A second non-raising analytical approach is the matching analysis (Chomsky 1965, Sauerland 1998, 2000, 2003), which was introduced earlier. On a matching analysis, like on a head-external one, the overt head is generated external to the relative clause. However, what undergoes movement within the clause is a second instance of the head, which is ultimately deleted under identity (schematized via the dotted line) with the external head:

$$(21) \quad [\text{head} [_{\text{CP}} \text{head}_t [\dots \langle \text{head}_t \rangle \dots]]]$$



The exact nature of this deletion operation varies on different accounts. On all matching analyses, the internal head is PF-deleted (i.e., not pronounced). On some matching analyses, the internal head is necessarily, or at least usually, also LF-deleted (i.e., it is necessarily not interpreted; cf. Munn 1994, Citko 2001). On other matching analyses, the internal head is normally not LF-deleted (i.e., it is at least normally interpreted; cf. Sauerland 2003, Salzmann 2019).

For the remainder of this section, I group head-external and matching relatives together under the rubric of non-raising relatives; we will return to the question of how to distinguish those two kinds of relatives in §5.

3.2 Raising and non-raising relatives in Atchan

The standard way to distinguish between different kinds of relative-clause structures comes from connectivity effects, which test whether a relative-clause head

⁷ What I term *non-raising* accounts are sometimes referred to as “externally-headed” accounts, on the grounds that the overt head is base-generated outside the relative clause in these analyses. Note, however, that I follow Bhatt (2002), Schenner (2019), a.m.o., in reserving the term *externally-headed* relative to only a subtype of non-raising relatives, i.e., those that involve operator movement.

can in some sense behave as though it occupies different positions in the clause (i.e., whether it can behave as though it were inside the relative clause and/or in the matrix clause). The kinds of connectivity effects that have been applied in the analysis of relative clauses include idiom interpretation (Schachter 1973), superlatives (Bhatt 2002), binding-theory principles (Schachter 1973), and morphological case (Deal 2016), among others.

In this section, I apply connectivity diagnostics to show that Atchan has raising and non-raising relative clauses. I first make this case on the basis of NCI licensing phenomena. I support this conclusion with evidence from extraposition. Finally, I show that the subject dislocation in Atchan relatives forces a raising structure.⁸

3.2.1 The logic of connectivity tests: Raising and non-raising

Before we turn to the Atchan data, it is worth being explicit about how connectivity effects are leveraged to provide evidence for relative-clause structures. Fundamentally, many of these tests rely on licensing requirements to probe the underlying relationship between the surface head and relative clause.

One type of licensing configuration, which we focus on in this section, is a configuration in which the head must be licensed by other material. In this configuration, the licensing material can be moved around (placed in the matrix clause or in the relative clause); the claim, then, is that we can learn about the underlying relationship between the head and other material by seeing when licensing is (un)successful.

⁸ A few notable connectivity diagnostics *not* applied in this paper include morphological case, binding-theoretic evidence, and scope. In short, this is largely due to particularities of nominal structure in Atchan. Regarding case, Atchan does not display clear morphological case (the pronouns glossed as SBJ and OBJ in this paper are clitics conditioned by adjacency with the verb, not abstract Case), rendering this diagnostic inapplicable. Regarding binding-theoretic evidence, Atchan nouns do not permit PP modifiers (rendering the classic *picture of herself/next to her* construction unavailable). Instead, this type of modification is accomplished either via a relative clause (e.g., *picture that is next to her*; see §5.5.2 for more discussion) or possession (e.g., *her picture*). Neither of these structures is especially useful to us: the former for reasons of circularity (using relative clauses to probe the structure of relative clauses), and the latter because it is not straightforward to diagnose whether a possessor is narrowly a possessor of the head or a possessor of the relative clause. More broadly, binding-theoretic reconstruction effects have been argued to be less reliable in relative clauses (cf. Cecchetto 2005). Data on scope is currently unavailable, and again relies on constructions whose analogues in Atchan are not obvious. Some scope-based evidence relies on adjectival numerals (cf. Salzmann 2006), while other (controversial) evidence relies on superlative morphology (Bhatt 2002; cf. also Heycock 2019, a.m.o.). At this point, it is not clear whether Atchan numerals can be adjectival; Atchan also exhibits verbal *exceed*-comparatives rather than adjectival comparatives.

To illustrate, we can consider the English idiom *make headway*.⁹ A classic view of this idiom (following Schachter 1973, Bhatt 2002) holds that this expression—namely, the nominal object *headway*—is idiomatic. Evidence for this claim comes from the observation that *headway* is fully grammatical alongside *make* (22), but non-possessed (*the*) *headway* is degraded when it occurs without *make* (23):

- (22) We made headway.
 (23) * (The) headway was sufficient.

Throughout this paper, I follow Bhatt (2002) in assuming that idiomatic interpretations of VPs are available when the constituent parts are base-generated as a constituent (see also Schachter 1973, Marantz 1984, Chomsky 1993, a.o.).¹⁰

This pair of data and bridging hypothesis give us the tools needed to leverage *make headway* as a connectivity diagnostic. That test involves adding a relative clause containing the verb *make* to sentences like (23), as shown below:

- (24) The [headway_{*i*} that we [made *t*_{*i*}] was sufficient.

If we know that *headway* can only be interpreted when base-generated alongside *make*, then the availability of the idiomatic reading in (24) provides evidence that the overt relative-clause head can be base-generated together with the relative-clause verb. That is, (23) shows that English has raising relative clauses.

Idiomatically-interpreted objects of VPs can also provide evidence for non-raising structures, when the licensing item is contained in the matrix clause. An example of this configuration is shown below:

- (25) We [made] [headway that was sufficient].

Here, we again know (because of the availability of the idiomatic reading) that *headway* must have been generated together with *make*. We therefore know that

⁹ Much ink has been shed regarding this idiom, which complicates the data in (22)-(23). For instance, Lasnik & Fiengo (1974) note that possessed *our headway* is marginally acceptable without *make*:

- (1) ? Our headway was insufficient. (Lasnik & Fiengo 1974)

The ? judgment is Lasnik and Fiengo's. In this expository discussion, I focus purely on non-possessed (*the*) *headway*, for which the speakers I have consulted have clearer judgments about the ungrammaticality of (23).

¹⁰ There are other possibilities; namely, the idiomatic interpretation could be available when the constituent parts are interpreted as a constituent at LF (Chomsky 1993, Marantz 1984). The distinction is not important in this section but will become so later, in section 5.3. While I couch the discussions here in Bhatt's terms, everything I say is compatible with a LF-interpretation view as long as the internal head in a matching relative is also interpreted. The idea that the internal head is also interpreted when possible in matching relatives is fairly standard (and consistent with, for instance, Salzmann's (2019) default assumptions).

headway must have been generated external to the relative clause—if this relative clause had been derived via raising, *headway* would not have been generated as a constituent with *make*.

This type of connectivity test relies on configurations in which the relative-clause head must be licensed by other material. In the next section, I will turn to Atchan negative concord items (NCIs), which are licensed by syntactic negation. In the next subsection, I apply this connectivity test with Atchan NCIs, arguing that Atchan has both raising and non-raising relatives. Afterward, I apply the additional diagnostic of extraposition, which has been proposed as an independent test for non-raising structures.

3.2.2 NCIs and extraposition in Atchan

Here, we turn to the NCI (*á*)-*jéke* ‘anything’, which is licensed by sentential negation.¹¹ This NCI is bimorphemic, with the initial *á*- a class marker. Class markers in Kwa languages generally involve a high degree of attrition of the historical Niger-Congo noun-class system (Good 2012), and this is true of Atchan. Atchan noun-class markers are lexically specified (Bôle-Richard 1983, Dido 2018), and the conditions on when noun-class markers can or must occur in Kwa languages are not entirely clear. Impressionistically, class markers in Atchan are obligatory in sentence-initial positions (e.g., they are obligatory with subjects and when DPs are focused) but are otherwise not obligatory.¹²

Crucially, for our purposes, (*á*)-*jéke* is licensed by clausemate negation (26a) but not by long-distance negation (26b)¹³ or in non-veridical environments (26c-26d):

- (26) a. mē̃ [*(nē̃)] ntɛ jéke
 1SG NEG do anything
 ‘I’m not doing anything.’ (kou_20240310)
- b. *á [lé] tã timote hēmē̃ [sále kati tɛ jéke]
 3INAN NEG surprise T. in.front COMP K. do anything
 Intended: ‘It wasn’t surprising to Timothée that Katie did anything.’
 (yap_20220929)
- c. wú ɛ [*(le)] di jéke
 Q 2SG.SBJ NEG eat anything

11 Atchan NEG has multiple allomorphs. When preceded by a nasal singular subject pronoun like *mē̃* 1SG, the allomorph is *nē̃*; when preceded by a lexical nominal or non-nasal subject pronoun, the allomorph is *le*. See Russell (2023) for more discussion.

12 See Footnote 21 for discussion of the behavior of noun class markers in possession.

13 Here, *timote hēmē̃* is a postpositional phrase indicating the experiencer of surprise.

- ‘Did you *(not) eat anything?’ (kou_20220705)
- d. [k^hé̃ ε *(le) té jéke] á ba nimã mē
 if 2SG.SBJ NEG do anything 3INAN FUT please 1SG
 ‘If you *(don’t) do anything, I will be happy.’ (kou_20220705)

This evidence shows that *Atchan* (*á*)-*jéke* is an element that must be licensed by syntactic negation: other downward-entailing environments, for instance, cannot license it.¹⁴

While (*á*)-*jéke* and its licensing negation must occur in the same clause, textual data shows that other DPs can occur between the two. This is illustrated in the following New Testament examples. In (27a), *jéke* is a direct object and *nke* 3SG.OBJ the indirect object; in (27b), *jéke* is the second object in an instrumental serial verb construction:

- (27) a. ló wo le se nke yéke
 ló wo [le] se nke jéke
 so 3PL NEG give 3SG.OBJ anything
 ‘So they did not give him anything.’ (Luke 20:11)
- b. óle ge bhó nke té yéke
 ó [le] ge bó nke té jéke
 PRO.INDEF NEG can take 3SG.OBJ do anything
 ‘They cannot do anything with him (lit. take him and do anything).’
 (Luke 9:62)

What this shows, for our purposes, is that other DPs can occur between negation and (*á*)-*jéke* but do not intervene for licensing.

A thorough analysis of (*á*)-*jéke* is outside the scope of this paper, but for concreteness, I follow Zeijlstra (2004), Deal (2022), a.o., in assuming that this NCI is licensed via syntactic Agree with negation. NCI licensing across languages is known to be, roughly, clause-bounded (see, e.g., Haegeman 1991), explaining the lack of licensing by NEG in (26b). This clause-boundedness of licensing might be formalized, for instance, with a CP horizon on the relevant licensing probe (cf. Keine 2019).

¹⁴ Note also that (*á*)-*jéke* does not have free choice uses:

- (1) *kati ge té á-jéke se mé njõ
 K. can do CM-anything give 3SG friend.PL
 Intended: ‘Katie would do anything for her friends.’ (yap_20220929)

Importantly for our purposes, NCIs can be licensed by negation even when they undergo later A'-movement, as shown in the following example of focus movement:¹⁵

- (28) á-jékε_i nō mē nē ni t_i
 anything FOC 1SG NEG eat
 'I didn't eat ANYTHING.' (kou_jea_20220809)

Maintenance of licensing under A'-movement is a crucial prerequisite for applying NCI licensing as a connectivity diagnostic.

Accordingly, we have established a locality-constrained dependency between the verbal spine and relative-clause head that we can use to probe connectivity. The relevant test here involves situating (á)-jékε in the relative-clause head and manipulating the position of negation.

Evidence that Atchan has raising relatives comes from (29):¹⁶

- (29) mē ni [(á)-jékε_i k^hé ʒulian le hē t_i]
 1SG eat CM-anything COMP J. NEG cook
 lit. 'I eat anything that Julianne didn't cook.'
 (yap_20220811, yap_20220929)

The NCI in (29) must be base-generated inside the relative clause, so that it could locally Agree with negation. Accordingly, the relative clause (29) must be derived via raising.

The reader might be interested to note that NCIs in the head are also licensed by matrix-clause negation:

- (30) mē nē ni [jékε_i k^hé ʒulian hē t_i]
 1SG NEG eat anything COMP J. cook
 'I don't eat anything that Julianne cooked.' (20220810_yap)

There are two possible explanations for how the NCI is licensed in (30). One possibility is that (30) is a non-raising relative, in which case it is merged outside the relative clause and is local to matrix-clause negation in that merge site. A second possibility is that Atchan only has raising relatives—so (30) is a raising relative—but the NCI raises into a derived position in which it is local to negation.

To distinguish between these possibilities, I turn now to extraposition, an independent test for raising structures. Here, I follow the account of [Hulsey & Sauerland \(2006\)](#). Hulsey and Sauerland propose that extraposition is only available with

¹⁵ Notably for definitional purposes, this example parallels the standard fragment answer test for NCIs ([Giannakidou 2000, 2006](#)), if we assume that fragment answers involve focus movement and ellipsis ([Merchant 2004, Merchant et al. 2013](#)).

¹⁶ I offer literal translations of these NCI-containing sentences; determining the interpretation of the NCI here must be left to future work.

non-raising relatives. They show, for English, that relative clauses cannot extrapose when a raising derivation is forced. Here, I show that this extraposition diagnostic also applies to Atchan. While relative-clause extraposition is generally permitted in Atchan, it is blocked when raising is independently forced.

For the present discussion, we can be fairly agnostic about the mechanism that makes the extraposition of raising relatives unavailable. Hulsey and Sauerland adopt Fox & Nissenbaum's (1999) late-merge account of adjunct extraposition; for Hulsey and Sauerland, then, extraposition of a raising relative is impossible because a raising head remains inside the CP, so the relative-clause CP cannot possibly be late-merged. If, by contrast, relative-clause extraposition involves true syntactic movement (Drummond 2009, Sportiche 2016, a.o.), two kinds of explanations for the incompatibility of raising and extraposition are possible. The first maintains that the incompatibility arises because the raising head remains CP-internal: if, say, extraposition can only target full CPs, then it follows that raising relatives with CP-internal heads are not plausible targets for extraposition. A second explanation holds that it is the movement of the head that blocks extraposition: perhaps that movement dependency itself blocks extraposition (if, e.g., it is dispreferred to extrapose material that contains part of a movement chain). Any of these possibilities, I believe, would be sufficient to explain this data.¹⁷

Extraposition over postpositions in Atchan is generally available. An example of a non-extraposed and extraposed relative pair is shown below.

- (31) a. mē nc^{he} [ják^hú_i k^hé^é é nē nthã t_i] t^ho
 1SG sit chair COMP 3SG.SBJ.PFV NEG build top
 'I sit on chairs that she didn't build.' (yap_20220811)
- b. mē nc^{he} [ják^hú_i] t^ho [k^hé^é é nē nthã t_i]
 1SG sit chair top COMP 3SG.SBJ.PFV NEG build
 'I sit on chairs that she didn't build.' (yap_20220811)

We see in (31b) that extraposition over the postposition *t^ho* is possible: relative-clause extraposition does occur in Atchan.

However, extraposition is not permitted when raising derivations are independently forced. In NCI configurations where negation is in the relative clause (forcing raising), extraposition is blocked (cf. (29)):

- (32) mē nc^{he} [á-ják^hú/*á-jéke_i] t^ho [k^hé^é ʒulian [le] t^hã t_i]
 1SG sit CM-chair/CM-anything top COMP J. NEG build
 lit. 'I sit on chairs/*anything that Julianne didn't build.' (yap_20220811)

¹⁷ In the following data involving extraposition, I mark the thematic positions associated with the relative-clause heads with traces for readability, but I do not commit to a movement-based derivation of extraposition.

When raising is forced (via relative-clause-internal negation), extraposition is unavailable. I conclude that extraposition in Atchan is tied to the availability of non-raising structures, in accordance with Hulsey and Sauerland’s analysis.

A broader consequence of this observation, of course, is that Atchan has both raising and non-raising relative clauses, and we have established diagnostics for both raising structures and non-raising structures. In the next section, we will expand our look at relative clauses in Atchan to those with dislocated subjects, where we will again apply our raising and non-raising diagnostics.

3.3 Subject dislocation and raising

In this section, we turn to subject-dislocation relatives in Atchan. I use the same connectivity diagnostics from above to argue that the presence of a subject dislocation in an Atchan relative clause forces a raising structure. The dislocated subject disrupts NCI licensing by matrix-clause negation, and subject-dislocation relatives cannot extrapose.

A grammatical subject-dislocation relative clause where the head must be interpreted internal to the relative clause is shown in (33). This example shows that raising structures (forced by having *(á)-jékε* in the head and negation in the relative clause) are available in the presence of the dislocated subject:

- (33) mē ni [zʉlian_i] jékε_j k^hé a_i [le] hē t_j]
 1SG eat.PFV J. anything COMP EXTR NEG cook
 lit. ‘I eat anything that Julianne doesn’t cook.’ (yap_20220929)

However, the dislocated subject disrupts licensing when matrix-clause elements need to license the relative-clause head, as shown in (34b):

- (34) a. mē [nē] ngε [jékε_j k^hé zʉlian k^hwē t_j hrɔmã]
 1SG NEG find anything COMP J. pick.up hide
 ‘I didn’t find anything that Julianne hid.’ (yap_20220810)
 b. mē [nē] ngε [zʉlian_i] jí/*jékε_j k^hé a_i k^hwē t_j hrɔmã]
 1SG NEG find J. thing/anything COMP EXTR pick.up hide
 ‘I didn’t find anything that Julianne hid.’ (yap_20220810)

Here, we see that the addition of a dislocated subject disrupts licensing by matrix-clause negation. This suggests that subject dislocation forces raising relative-clause structures. As discussed earlier, configurations like (34a) force non-raising structures, so they are not compatible with subject dislocation.¹⁸

¹⁸ From the previous section, we know that NCI licensing is not generally impacted by having other DPs located between negation and the NCI: this supports a view on which the ungrammaticality of

This view of the dislocated subject's distribution also correctly predicts that extraposition is unavailable in subject-dislocation relatives, in accordance with [Hulsey & Sauerland \(2006\)](#). The relevant contrast is shown below. In relative clauses with no subject dislocation (35a), extraposition is permitted (35b); but when the subject is dislocated (36a), extraposition is blocked (36b).

- (35) a. jipɔ hrɔmã [ájáj k^hé mɔja bá jã t_j] mánji
 child hide tree COMP M. FUT cut behind
 'The child hid behind the tree that Moya will cut down.'
- b. jipɔ hrɔmã [ájáj] mánji [k^hé mɔja bá jã t_j]
 child hide tree behind COMP M. FUT cut
 'The child hid behind the tree that Moya will cut down.'
- (36) a. jipɔ hrɔmã [mɔja_i] jáj k^hé a_i bá jã t_j] mánji
 child hide M. tree COMP EXTR FUT cut behind
 'The child hid behind the tree that Moya will cut down.'
- b. * jipɔ hrɔmã [mɔja_i] jáj] mánji [k^hé a_i bá jã t_j]
 child hide M. tree behind COMP EXTR FUT cut
 'The child hid behind the tree that Moya will cut down.'

(yap_20220803)

This is consistent with a view on which the presence of subject dislocation forces raising, given [Hulsey & Sauerland's \(2006\)](#) observation that raising relatives cannot extrapose.¹⁹

3.4 Summary

The evidence presented in this section for the presence of both raising and non-raising relatives in Atchan is summarised in Table 2. In this section, we have seen three interacting manipulations that impact the availability of NCI licensing (and, more broadly, of relative-clause grammaticality) in Atchan. Extraposition forces non-raising structures, subject dislocation forces a raising structure, and the location of negation can force either one. This impacts the table as follows. With no

(34b) is not due to intervention by the dislocated subject. In the next section, I will propose that the head in an Atchan raising relative remains CP-internal. This explains why NCI licensing does not go through in (34b): negation and the NCI are not in the same clause, and the licensing condition on NCIs is generally a clausemate one.

¹⁹ As discussed previously, there are several possibilities for the source of the incompatibility of subject dislocation and extraposition: namely, if movement of the head is what standardly blocks extraposition of raising relatives, dislocation of the subject should similarly preclude extraposition. The ungrammaticality of (36b) shows us, at least, that extraposition and NCI licensing are consistent with one another as connectivity diagnostics in Atchan.

	NEG location	No subject dislocation	Subject dislocation
No extraposition	Matrix clause	✓	*
	Relative clause	✓	✓
Extraposition	Matrix clause	✓	*
	Relative clause	*	*

Table 2 Summary of head NCI licensing patterns in Atchan relative clauses based on extraposition, NEG location, and subject dislocation.

subject dislocation and no extraposition (the top left quadrant of the table), matrix-clause negation can force a non-raising structure and relative-clause negation can force a raising one. With subject dislocation but no extraposition (top right), raising is forced by virtue of the dislocated subject, which is consistent with relative-clause negation licensing but inconsistent with matrix-clause negation licensing. With extraposition but no subject dislocation (bottom left), the opposite pattern obtains: extraposition forces a non-raising structure, thereby blocking relative-clause negation licensing. Finally, the incompatibility between the extraposition and subject dislocation forces ungrammaticality across the board (hence both stars in the lower right quadrant).²⁰

In the next section, I focus on why it is that subject dislocation forces the raising structure. I suggest that the dislocated subject surfaces high in the relative-clause CP. The dislocated subject overtly marks the edge of the relative-clause CP, so the head must remain in the CP (and hence be derived via raising) when the subject is dislocated.

4 The syntax of Atchan raising relatives

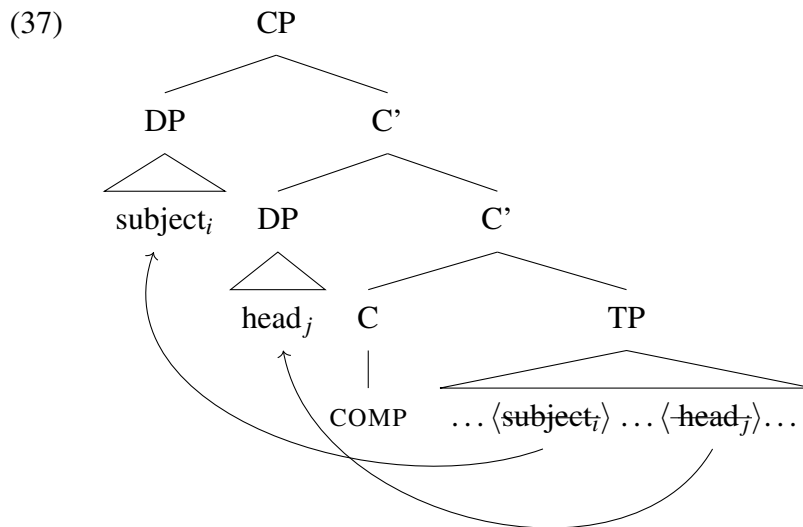
In the previous section, we saw that Atchan (like many languages) exhibits both raising and non-raising relatives. The fundamental goal of this paper is to identify what that relevant non-raising derivation in Atchan is. In order to make progress on that question, it is worth first sketching an analysis of *raising* relatives in Atchan (since hybrid analyses, which we will turn to in the next section, posit similar structure across raising and non-raising relatives). In this section, I lay out my assumptions about the structure of raising and subject-dislocation relatives, building on my earlier work in [Jarvis 2023a](#) and [Jarvis 2023b](#).

²⁰ Note that this fourth-quadrant ungrammaticality has nothing to do with NCI licensing *per se*; extraposed subject-dislocation relatives are always ungrammatical.

4.1 Basic syntax: Movement(s) to CP

My basic proposal is that, in subject-dislocation relatives, the subject moves to occupy a position high in the relative-clause periphery, with the relative-clause head remaining lower inside the periphery.

Given that subject dislocation leaves behind the same characteristic movement resumptive elements as other A'-processes in the language, the simplest default assumption is that it (like other A'-processes) involves movement to the CP periphery.²¹ A direct consequence of this is that, in subject-dislocation relatives, the head must also surface inside the relative-clause CP. That is, we arrive at the following structure:



21 Perhaps the most salient alternative structure, from the literature on genitive relatives in Polynesian (cf. Seiter 1980), is that the dislocated subject might be a possessor in the nominal structure of the head. This alternative can be ruled out for Atchan because of the morphosyntax of possession. Possessed nouns cannot bear class markers (Dido 2018):

- (1) ak^ho á-kpró > [ak^ho kpró]
 Ako CM-hat Ako hat
 'Ako's hat' (Dido 2018:3b, p.27)

However, heads in subject-dislocation relatives can bear class markers:

- (2) mē ŋ^wu [moja_i á-já_j k^hé á_i lo jā t_j]
 1SG see.PFV Moya CM-tree COMP EXTR go cut
 'I saw the tree that Moya will cut down.' (yap_20220713)

This shows the relationship between a dislocated subject and the head is not the same as that between a possessor and possessum.

This is a [Kayne 1994](#)-style relative clause, with the head remaining inside the CP.

When there is no subject dislocation, I assume that the raising head still moves to CP. In these relative clauses, however, it is less clear whether it remains inside CP or whether it undergoes reprojection. I will address questions related to reprojection, and the external syntax of Atchan raising relatives more broadly, in §4.3.

4.2 Driving subject dislocation

To make this analysis more precise, we need to discuss the probes that give rise to relative-clause formation in Atchan. It is standard to assume that movement of a relative-clause head is driven by a [uREL*] probe, which looks into its c-command domain and moves the highest [REL]-bearing item. However, we need to say something more to derive subject dislocation. Before that, let us address in more detail what kinds of nominals can be dislocated subjects.

First, as discussed earlier, *only* subjects can be dislocated to the pre-head position. This was shown in (17), repeated below:

- (38) [aká_i bje_j k^hé[́] a_i pɔ t_j] é-ɲɔ̃
 A. woman COMP EXTR love PROG-be.pretty
 ‘The woman Aka loves is pretty.’
 #‘The woman who loves Aka is pretty.’ (kou_20220307)

These examples show that attempting to dislocate non-subject items to the pre-head position is not permitted. This is shown in (38) by the unavailability of the second reading. This second reading would require base-generation of *aká* in direct object position.

Second, though most of the example dislocated subjects we will see in this paper are proper names, other types of subjects can also be dislocated. This is shown below, where the common nouns *jíɲɔ* ‘child’ and *gba* ‘dog’ are dislocated:

- (39) a. [jíɲɔ_i si_j k^hé[́] a_i ba t_j] á té nánã
 child place REL EXTR be.at 3.INAN COP red
 ‘The place where the child lives is red’ (20220307_kou)
 b. [gba_i fá^há^hó-si_j k^hé[́] a_i ba t_j] á té p^hóp^ho
 dog house-place REL EXTR be.at 3.INAN COP white
 ‘The house where the dog lives is white.’ (20220221_kou_jea)

Interestingly, however, there may be additional constraints on *when* a particular subject can be dislocated.²² Specifically, when the head is human, common-noun dislocated subjects are judged as degraded compared to proper-name dislocated subjects:

²² I thank a reviewer for suggesting that I explore this data.

- (40) a. mē̃ ŋwu [jíɔ̃_j k^hé̃ kati/ɓje pɔ t_j]
 1SG see child COMP K./woman love
 ‘I saw the child that Katie/the woman loves.’
- b. mē̃ ŋwu [kati/?ɓje_i jíɔ̃_j k^hé̃ a_i pɔ t_j]
 1SG love K./woman child COMP EXTR love
 ‘I saw the child that Katie/the woman loves.’ (kou_20240319)

What this seems to suggest is that while *only* subjects can dislocate, not *all* subjects can dislocate in any sentence. Instead, subject dislocation in Atchan may be sensitive to a hierarchy effect, wherein proper names outrank human common nouns: a revised generalization might be that subjects can be dislocated in Atchan provided that they outrank the head (or perhaps more broadly provided that they outrank the other DPs in the sentence). More data is needed to make this empirical generalization fully precise; however, assuming that this hierarchy-based view is correct, this pattern fits into a wide literature on relative hierarchy effects (e.g., Cyclic Agree [Béjar 2003, Béjar & Rezac 2009]; Feature Gluttony [Coon & Keine 2021]; Dynamic Interaction [Deal 2021, Deal & Royer 2023]).

How, then, should we model the probe that drives subject dislocation? Given the data available at this point, two types of analyses present themselves, either of which will work equally well for the core claim of this paper. One approach, involving a global comparison between the subject and other nominals in the sentence, would hold that subject dislocation is driven by a probe that searches the entire sentence, attempting to move each highly-ranked DP it encounters (this is reminiscent of the logic of Dynamic Interaction). To constrain this mechanism, we would need to propose that ungrammaticality will arise if the probe attempts to move more than one DP (this is reminiscent of the logic of Feature Gluttony). A second approach, involving a more constrained comparison between the head and subject, would hold that raising of the relative-clause head and dislocation of the subject are accomplished at a similar point in the derivation and can reference each other: specifically, we might propose, a particular C probe or head is responsible for moving both the head and the subject.²³

Later in this paper, it will be helpful to us to suppose that head movement and subject dislocation occur in the same projection (CP). For this reason, I am inclined to adopt the second type of approach, which we could formalize as an ordered probes on C as follows:

- (41) C ① [uD+X] ② [uD+REL*]

²³ This latter approach is related to, but not entirely consistent with, an analysis that I explored in Jarvis 2023b. I refer the reader to that work and Scott 2021 for more discussion of multiple-probe setups and mixed A/A'-movement.

The first probe moves the closest DP (i.e., the subject), provided that it bears some appropriate additional feature X (the precise characterization of which must await future investigation);²⁴ the second moves the relative-clause head, provided that it is DP-sized.²⁵

Overall, then, we arrive at a situation in which Atchan has two (unfortunately homophonous) relativizing C heads:

- (42) a. C [uREL*]
 b. C ① [uD+X*] ② [uD+REL*]

I assume that the two C heads are in free choice in the grammar, with the effect, for example, that either can derive a raising relative clause. In the discussion to come, the precise feature specification that drives subject dislocation will not be relevant to us; all that will matter is that subject dislocation and movement of the relative-clause head are carried out by probes located on the same head. Note also that, on this view, the reason why it is the subject that can dislocate to the pre-head position (and not other DPs in the sentence) is because of locality: the subject is the structurally-highest DP.

4.3 External syntax and interpretation of raising relatives

This paper is fundamentally focused on relative-clause connectivity. However, to develop a full analysis of raising relatives in Atchan, we need to have a working hypothesis regarding the external syntax and (relatedly) interpretation of Atchan raising relatives. This is especially of interest because at least some raising relatives in Atchan—namely, at least the ones that involve subject dislocation—have raising heads that are syntactically large: on the set of probes I proposed above, the raising head in a subject-dislocation relative *must* be DP-sized.

This is, in fact, a good prediction. Atchan raising heads in subject-dislocation relatives can show overt quantifier-related material:

- (43) a. [_{CP} ʒulian_i] [_J [kɔsɔ k^húúmbrẽ]_j k^hé a_i p^hɛdi t_j] t_é p^hop^ho
 J. chicken all COMP EXTR sell COP white
 ‘All chickens that Julianne sold are white.’ (Jarvis 2023a:(11))
- b. [_{CP} ʒulian_i] [_J [kɔsɔ bẽ]_j k^hé a_i p^hɛdi t_j] t_é p^hop^ho
 J. chicken INDF COMP EXTR sell COP white
 ‘A chicken that Julianne sold is white.’ (Jarvis 2023a:(13))

24 It might be useful to think of this probe as having the satisfaction condition D (cf. Deal & Royer 2023), helping to explain why only subjects can dislocate to before the head.

25 It will be important later that the complex C head can only move a relative-clause head that is DP-sized; smaller (e.g., NP-sized) heads cannot be moved by this probe.

In [Jarvis 2023a](#), I show that quantifiers like *k^húúmbrẽ* ‘all’ in (43a) take the relative clause and head together as their restriction: (43a) is true in Atchan as long as each individual that is both a chicken and an individual sold by Julianne is white, just like its English translation. In that work, I propose that Atchan relatives like (43a) are interpreted, like other raising relatives, via Trace Conversion ([Fox 2002](#)), but that the quantifier does not leave the CP.²⁶

On that view, all of the ‘interesting’ semantics of an Atchan raising relative (at least one with an overt determiner or quantifier on the raising head) occurs within the CP: crucially, I am *not* assuming obligatory reprojection of the head noun outside the relative-clause CP.²⁷ This view is unlike that of [Bhatt 2002](#), for instance. However, the idea that relative-clause heads can remain inside the CP is a pervasive one in the literature, going back at least to the work of [Kayne \(1994\)](#). This idea is also widespread in the hybrid analyses that we will turn to in the next section; on such analyses, in appropriate environments the only interpreted head is a CP-internal head that reconstructs to its base position (cf. [Salzmann 2019:\(20\)](#)).

Of course, this view naturally raises the question of how and why Atchan raising relatives distribute like nominals. Here, it is perhaps instructive to look towards the literature on internally-headed relative clauses, where a similar question arises. In some languages, internally-headed relatives exhibit overt determiner- or demonstrative-like syntax at the edge of the relative, providing overt evidence for external nominal structure (e.g., Lakhota ([Williamson 1987](#)), Hidatsa ([Boyle 2016](#)), and Washo ([Hanink 2020](#))). Even in the case of internally-headed relatives with no overt nominal syntax, null nominal structure is often assumed or argued for (e.g., Japanese, cf. [Grosu’s \(2012\)](#) discussion of [Watanabe 2006](#)). For Atchan, I also assume null nominal structure outside of the relative-clause CP, since Atchan raising relatives do distribute like nominals (for example, in that they can occupy canonical subject position in (43)). Note, however, that unlike in the analyses cited here, that I take the null external nominal structure to, at least, not change the type of Atchan raising relatives.

Given this discussion, and especially the large size of the raising head, it might be natural to question where Atchan sits on the continuum between a raising relative

²⁶ Crucially, the relative clauses in these examples include subject dislocation. (We know that *ɟulian* is a dislocated subject, not (say) a matrix-clause topic, due to the movement-pattern resumptive [a].) For an alternative approach to subject dislocation and its impact on relative-clause interpretation, we could look to the view of [Cole \(1987\)](#), on which heads in internally-headed relatives undergo covert movement outside of the CP (for our purposes, roughly covert reprojection) to facilitate interpretation. A reviewer raises the hypothesis that this covert reprojection process might similarly occur in Atchan, and that subject dislocation might intervene on and block that process. What we would expect in such a case is that the interpretation of quantified heads should markedly differ depending on whether or not the subject is dislocated. However, as we see here, this is not the case.

²⁷ See Section 5.5.2 for more discussion.

and an internally-headed relative. In fact, accounts of raising relatives are split as far as the size of the raising head is concerned. On some analyses of English-type raising relatives, the raising head is only an NP (Bhatt 2002, a.o.), while on others, the raising head is a DP with null determiner (Kayne 1994, Bianchi 1999). Recently, Abramowitz (2021) complicates the empirical picture further, arguing that raising relatives in a number of languages can involve raising DP heads with overt D-related structure. (Following Hiraiwa 2005, Bodomó & Hiraiwa 2010, Hiraiwa et al. 2017, Abramowitz terms this structure a ‘left-headed internally-headed relative.’)

What, then, constitutes a raising relative (as opposed to an internally-headed relative with partial head movement)? I propose that two diagnostics can help us distinguish between these alternatives. First, I propose that ‘raising relatives’ should involve obligatory movement of the head to the edge of the relative (since, in a raising relative, movement of the head facilitates interpretation)—i.e., these languages should not exhibit in-situ internally-headed relatives. Second, *if* the raising head can be DP-sized, ‘raising relatives’ should have determiners on the head that are interpreted high, taking the relative clause and head together as their restriction (since this is the interpretation that is made possible by raising of the head).²⁸ Since Atchan relative clauses meet both of these criteria, I maintain that we can fairly consider them to be raising relatives in the traditional sense, with the syntactic category of the head an additional cross-linguistic parameter.

5 No matching relatives

In this section, I argue that Atchan does not have matching relatives. This challenges the often-assumed ubiquitousness of matching relatives and demonstrates that a hybrid, matching-based account cannot be applied to Atchan.

I start by discussing in Section 5.1 how hybrid accounts work in further detail. Then, I argue in Section 5.2 that a hybrid account cannot capture the word order possibilities in Atchan relative clauses. More fundamentally, I argue that the reason that a hybrid account cannot be applied to Atchan is because Atchan lacks the matching relatives on which hybrid accounts are based. To make this argument, I further discuss the logic of connectivity tests in 5.3 and then present evidence from idiom interpretation in 5.4.

²⁸ To be clear, this high interpretation of relative-clause determiners is a meaningful criterion, and *not* merely a given. In ‘left-headed internally-headed relative’ languages like Bùlì (Hiraiwa 2005) and Khanty (Abramowitz 2021), relative-clause quantifiers have low interpretations that parallel ‘standard’ internally-headed relatives in languages like Japanese (cf. Shimoyama 1999).

5.1 Hybrid accounts

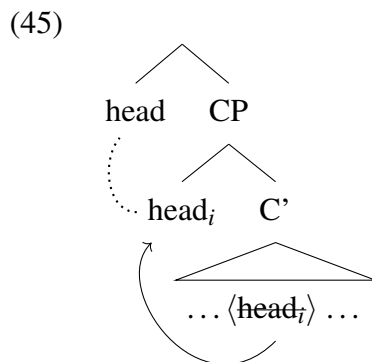
In Section 3.1, I introduced the traditional three-way analytical split in relative-clause derivations. Now, I want to return to discuss hybrid accounts in more detail. Hybrid accounts are an increasingly popular way to account for the commonness of multiple relative-clause derivations within a single language (Munn 1994, Citko 2001, Krapova 2010, Salzmann 2019, Cinque 2020). These accounts explain this multiplicity by exploiting the flexibility inherent in the matching account, given its two representations of the relative-clause head.

Some early hybrid accounts (Munn 1994, Citko 2001) are framed as extensions of a raising analysis. These authors note that not all relative clauses in languages like English can be derived via raising. For instance, as discussed earlier, the following relative clause must be derived via a non-raising parse:

(44) We made [headway that was surprising].

As noted by Bhatt (2002), the surface head *headway* must be generated as a constituent with matrix-clause *make*, precluding a raising derivation. While Bhatt proposes deriving (44) as a matching relative (for him, a wholly separate derivation than raising relatives), Munn and Citko each propose adopting a structure in which *all* relative clauses involve internal and external heads.

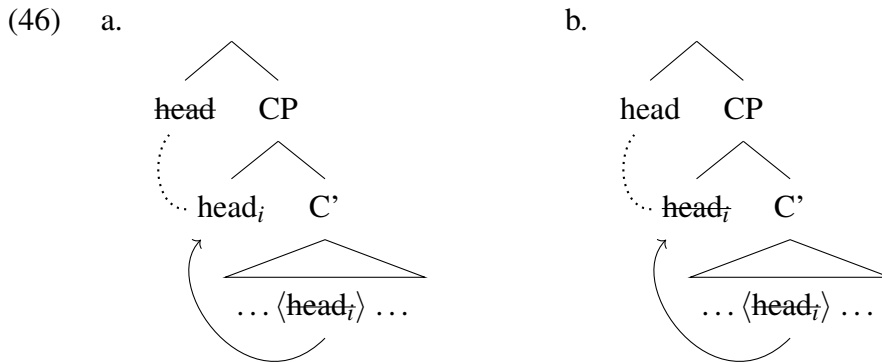
On a hybrid account, then, all relative clauses are derived from a structure like the one below:



On a traditional matching analysis, the deletion operation that occurs between the internal and external heads is unidirectional: the internal head is deleted on identity with the external head. On a hybrid account, the deletion operation can proceed in either direction. This deletion operation, on a hybrid account, is constrained by recoverability: a head is nonrecoverable (and therefore must be pronounced) exactly when there is independent material (e.g., an idiom chunk or an instance of NPI-

licensing negation) requiring it to be interpreted in a certain position (Salzmann 2019). Otherwise, either head is recoverable from the other.

All hybrid accounts assume that the head that is not pronounced is PF-deleted (since PF-deletion is tantamount to non-pronunciation). However, as discussed previously, these accounts differ as to whether the non-pronounced head undergoes LF-deletion (i.e., non-interpretation) as well. Munn (1994) and Citko (2001), for instance, propose that the hybrid deletion operation involves both PF- and LF-deletion, but Salzmann (2019) does not. For the remainder of the paper, I follow Salzmann in assuming that the non-pronounced head is normally only PF-deleted, with exceptional LF-deletion occurring exactly when the non-pronounced head cannot be interpreted (e.g., when in English a head like *headway* must be idiomatically interpreted alongside one verb and not elsewhere). Ultimately, in a hybrid account, either of the following two structures is possible:



Here, (46a) is, at the end of the day, in essence a traditional raising structure, with the external head not pronounced. In contrast, (46b) is a traditional matching structure. Hybrid accounts, then, are a clean way of capturing the idea that relative clauses in languages like English are often ambiguous between raising and matching structures, with one structure or the other being forced in certain configurations.

Hybrid approaches have continued to be developed as a means of capturing the raising-matching ambiguity. Salzmann (2019) argues for a hybrid account that derives all English and German relative clauses from a single doubly-headed structure reminiscent of Munn’s and Citko’s analyses, with the additional possibility of vehicle-change mismatches (Fiengo & May 1994) between the two heads. Salzmann argues that this approach best accounts for various binding effects in matching relatives. This view, he suggests, has both increased empirical coverage and theoretical simplicity over an account that posits separate raising and matching derivations. In a related vein, Cinque (2020) proposes that a single, unified hybrid account can and should be applied cross-linguistically.

5.2 Subject-head word order

Because hybrid accounts derive multiple relative clause structures from a single doubly-headed one, they make the prediction that different kinds of relatives in a single language should share similar peripheral structure. In this section, I argue that this prediction, while correct for various other languages, does not hold up in Atchan. This provides evidence that a single hybrid derivation does not underlie all Atchan relative clauses. This argument is based on word order and, crucially, relies on the proposal that the dislocated subject occupies a position in the clausal periphery. I briefly motivate this argument by discussing analogous data from Bulgarian, then return to Atchan.

Krapova (2010) notes that the relative-clause periphery in Bulgarian is complex, with additional information-structural projections above the RelP that hosts the relative-clause head. In raising relatives, topicalized and focused items occur to the left of the head:²⁹

- (47) ? [[_{Top/Foc} Zaradi zdravnata reforma]_i natiskăt deto Evropa okazva na bălgarija *t_i*] e neprestanen
 because-of health-care-the reform pressure-the that Europe
 exert-3SG on Bulgaria is constant
 lit. ‘Due to the health care reform, the pressure that Europe puts on Bulgaria is constant.’ (Krapova 2010:1257 (33c))

Krapova argues that (47) is a raising relative, with the topicalized/focused phrase occurring higher in the periphery than the raising-derived head *natiskăt*, which itself is hierarchically above the complementizer *deto*:

- (48) topic/focus > internal head > complementizer

In contrast, the location of these information-structurally-marked items differs in matching relatives. In matching relatives, they surface to the right of the head:

- (49) Tova e [ženata, [_{Top/Foc} naj-složnite pesni] deto peeše...]
 this is woman-the most-complex-the songs that sang-3SG
 ‘This is the woman that sang the most complex songs’
 (Krapova 2010:1256 (32a))

In (49), which Krapova suggests is a matching relative, the dislocated topic/focus phrase surfaces to the right of the head *ženata* but to the left of the complementizer.

²⁹ This ? judgment is Krapova’s. Krapova also suggests that the topicalized/focused phrase in (47) occurs within the relative-clause CP, though of course that phrase is also clause-initial in this example. I have added additional bracketing to the example to reflect the structure she suggests.

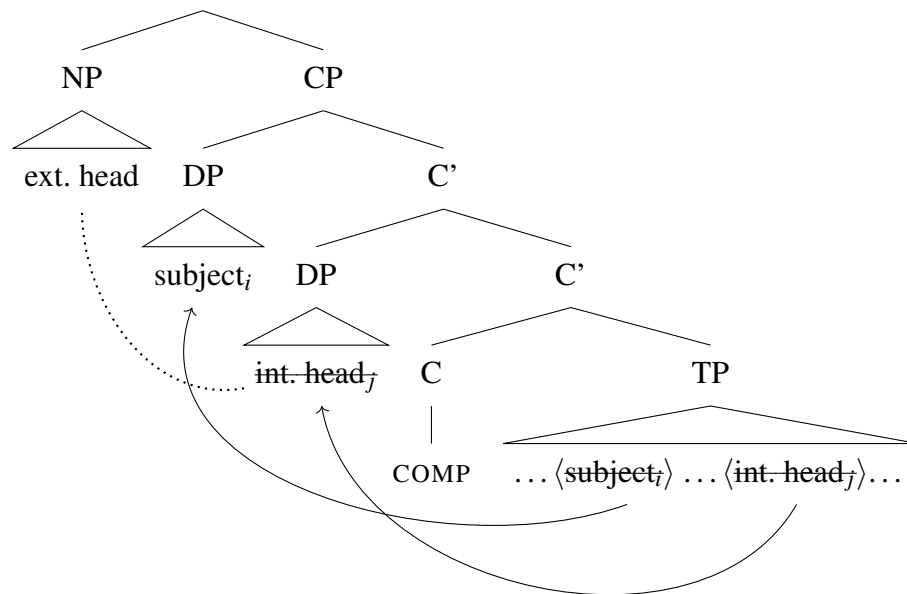
Overall, Krapova argues, Bulgarian raising and matching relatives share a similar structure, differing only in the relative order of the head and topic/focus phrase. The overall linear order is schematized below:

- (50) external head > topic/focus > internal head > complementizer

On this basis, Krapova pursues a hybrid analysis for Bulgarian relatives on which raising relatives like (47) and matching relatives like (49) are derived from a single underlying structure, which includes both of the heads in (50). Deletion of the external head (i.e., raising) yields topic and focus linearly to the left of the head, while deletion of the internal head (i.e., matching) yields topic and focus linearly to the right of the head.

As I proposed in the previous section, dislocated subjects in Atchan surface in the relative-clause periphery in raising relatives, linearly to the left of the head. We therefore have a situation fully analogous to Bulgarian. If we were to pursue a hybrid approach to Atchan, we should be able to stack an subject-dislocation relative clause with an additional external head, deriving a matching relative via later deletion of the internal head. This derivation is illustrated in the tree below. In this tree, the dotted line indicates that the internal, raising-derived head is deleted under identity with the external head:

- (51)



What this predicts, just as in Bulgarian, is that the hybrid-matching derivation should cause the linear order of the head and dislocated subject to flip. If the internal

head can delete under identity with the external head, then it should be possible to find relative clauses in which the head surfaces to the left of the dislocated subject.

This, however, is not borne out. While relative clauses with a dislocated subject preceding the head are grammatical (52a), relative clauses with the head preceding the dislocated subject are not (52b):

- (52) a. mē̃ ŋ^wu [aka_i bje_j k^hé̃ a_i pɔ t_j]
 1 SG see.PFV A. woman COMP EXTR love
 ‘I saw the woman who Aka loves.’ (yap_20220929)
- b. *mē̃ ŋ^wu [bje_j aka_i k^hé̃ a_i pɔ t_j]
 1 SG see.PFV woman A. COMP EXTR love
 Intended: ‘I saw the woman who Aka loves.’ (yap_20220929)

Unlike in Bulgarian, the peripheral structure cannot follow the surface head in non-raising relatives. (Note that neither the matrix-clause nor relative-clause verb imposes any licensing requirement on the head in these examples. In theory, then, either head ought to be recoverable from the other and therefore deletable.) This is evidence against a unified hybrid analysis for Atchan relatives, in the style of Bulgarian: on such an account, we cannot straightforwardly allow subject dislocation in raising relatives but block it in matching relatives.³⁰

There are various ways to account for this incompatibility. Some of them are relatively shallow: we might claim that the presence of subject dislocation *per se* disrupts the identity relation between the internal and external heads, perhaps on grounds of locality. This would, of course, require some appropriate parametrization of the difference between Bulgarian and Atchan, since topicalized/focused phrases in Bulgarian do *not* disrupt the relation. At this point, I do not know what would constitute an appropriate parametrization. Instead, in this section I argue that the unavailability of the head-subject word order results from something deeper: raising and non-raising relatives in Atchan result from completely separate derivations (and non-raising relatives lack the correct structure to give rise to subject dislocation).

In the remainder of this section, I will argue that the fundamental reason why a hybrid account is unavailable in Atchan is because Atchan has no matching relatives. All non-raising relatives in Atchan, that is, are head-external relatives. This

³⁰ Strictly speaking, on Krapova’s approach, the external head surfaces in Spec,ForceP. To rule out the unattested head-subject order, one could claim that the dislocated subject is extremely high in the clausal periphery (above ForceP). However, in addition to going against the rigid clausal periphery that Krapova posits, which is capped by ForceP, this account makes incorrect empirical predictions: this amounts to predicting dislocated subjects in non-raising relatives, which we saw earlier does not occur in Atchan. It is also not clear how such an account would capture locality for idiom licensing.

(partially) explains the ungrammaticality of (52b), since head-external relatives by definition do not involve a head-raising structure.

To make this broader claim about the available relative-clause structures in Atchan, I begin in Section 5.3 by expanding the earlier discussion about the logic of connectivity effects. I contrast two kinds of idioms and argue that one kind of idiom can, in some languages, serve not as a test for raising relatives but, rather, as a test that distinguishes head-external relatives from relatives with some internal representation of the head. In Section 5.4, I then apply this test to Atchan.

5.3 The logic of connectivity effects redux

At this point, we return to the discussion of how connectivity effects are applied as a diagnostic for relative-clause structures that was started in Section 3.2.1. What I want to do here is contrast two kinds of VP idioms, those that are idiomatic by virtue of their nominal object (exemplified by *make headway*) and those that are idiomatic by virtue of their verb (exemplified by *take a picture*). Specifically, I will argue that idiomatic-object VPs like *make headway* can serve as a diagnostic for raising structures, while idiomatic-verb VPs like *take a picture* (insofar as they are idiomatic in a given language) serve a different role and diagnose head-external structures. In this section, I focus on discussion of English, where these idioms have been most discussed; we will return to Atchan in the next section.

To begin, we can note that the idiomatic status of *headway* in the expression *make headway* is not the same as that of *picture* in *take a picture*. The relevant contrast between the two can be seen below. Here, *headway* requires *make* for its interpretation, but *picture* does not require *take*:

- (53) a. The headway *(that we made) was surprising.
 b. The picture (that we took) was pretty.

The idiom *make headway* is the kind of VP idiom on which the standard connectivity test we discussed earlier can be run (Bhatt 2002). The crucial element of this idiom, and the one that makes it suitable for the test, is that the nominal object itself has an idiomatic component to its meaning. Since the noun requires licensing via generation together with the verb, we can use it to distinguish raising and non-raising structures. The acceptability of the structure with the relative clause in (53a) is evidence that that relative clause was generated via raising, since *headway* could not be correctly interpreted if it were generated outside the relative clause.

In contrast, the idiomatic component of *take a picture* comes solely from the verb: there is no idiomatic element to the meaning of *picture* (as shown by the acceptability of (53b) without the relative clause). Accordingly, I argue, the relative clause in (53b) is not necessarily a raising relative clause.

In the literature, *take a picture* has sometimes been argued to be the kind of idiom that forces raising (Munn 1994, Sauerland 2003). The evidence offered in support of this view comes from Condition C effects. Specifically, as shown below, R-expressions within the head cannot be coreferential with the relative-clause subject (54a), while anaphors are licensed in this position (54b):

- (54) a. * the picture of Bill_i that he_i took (Sauerland 2003: 214 (23))
 b. the picture of himself_i that Bill_i took

On the basis of this evidence, these authors argue that *take a picture*, being an idiom, forces a raising structure; this predicts the ungrammaticality of (54a) as a Condition C effect under reconstruction (on the assumption that reconstruction is obligatory in A'-movement) and similarly predicts the grammaticality of (54b) as licensing of the anaphor via Condition A under reconstruction.

However, there are two challenges for this analysis of *take a picture*. The first is that there are other analyses of this contrast that do not appeal to reconstruction in explaining the judgments of the data in (54). The second is that this analysis of *take a picture* makes incorrect predictions for other diagnostics of raising structure.

Regarding the first point, Salzmann (2019) notes that the data in (54) can be explained without appealing to binding-theoretic effects under reconstruction. In particular, he appeals to an analysis on which picture-NPs contain a null PRO (i.e., the linearized syntax is [PRO_i picture of Bill_i/himself_i]). On this analysis, the ungrammaticality of (54a) is due to a Condition C effect on the surface; and the anaphor in (54b) is similarly licensed by PRO. While we would need to spell out more regarding the distribution of PRO on such an account, the fact that there are possible analyses on which we do not need to appeal to reconstruction to explain these judgments makes (54) not serve as clear evidence that *take a picture* forces raising.

Second, the idiomatic interpretation of *take a picture* is available in sentences where the raising structure is unavailable. Here, we can turn to Hulsey & Sauerland's (2006) extraposition test: extraposition, as we have seen, forces non-raising structures. If *take a picture* forced raising, we would expect extraposition of relative clauses containing the verb *take* to be impossible with the head *picture*. However, this is not the case. As shown below, extraposition with *take a picture* (55a) is just as acceptable as extraposition with a non-idiomatic verb (55b):

- (55) a. I saw the [picture] yesterday [that you took].
 b. I saw the [portrait] yesterday [that you painted].
 (56) * I was impressed by the [headway] yesterday [that you made].
 (cf. Hulsey & Sauerland 2006:(9a))

This pattern, with (55a) more acceptable than (56), suggests the photography interpretation of *take a picture* is not tied to raising structures.

How, then, does the idiomatic interpretation of *take a picture* arise? For English, there are two possibilities. One is to fully reject the idea that *take a picture* is idiomatic in the strict sense of requiring generation as a constituent. This is the view adopted by Kratzer (1996). On this view, a light verb like *take* is semantically a kind of piecewise function whose meaning varies depending on the meaning of the object with which it combines. If the object is a picture, the verb means *create via photography*; if the object is a medicine, the verb means *consume*; and so on. On this view, there is nothing idiomatic about the interpretation of *take a picture*. This interpretation of the verb should, consequently, be available with any relative-clause structure.

A second possibility maintains that *take a picture* has an idiomatic element. On this view, however, the raising and matching parses both have the right structure to give rise to the idiomatic interpretation. In a matching structure, as well as a raising one, an instance of *picture* would be generated as a constituent with *take*:

(57) the picture [_ipicture_i that we **took** <picture_i>]

If the crucial component for idiom interpretation is base-generation as a constituent, then a matching analysis is plausible for this relative clause. On a matching parse, *take* is still generated as a constituent with an instance of *picture*, so the idiomatic interpretation should be available. The occurrence of *picture* that *take* is generated with is not related to the surface head via movement, but this does not matter. Since English is standardly argued to have raising and matching but no head-external relatives (Safir 1999, Bhatt 2002), this account predicts—similarly to Kratzer’s—that the idiomatic interpretation of *take a picture* should be widely available in English relative clauses. That is, in any possible English relative clause structure (raising or matching), the idiomatic interpretation will be available, because *take* is always generated as a constituent with some occurrence of *picture*.

For English, either of these accounts seems viable. However, these two accounts would diverge if English were a language with head-external relatives. In such a language, Kratzer’s account would predict that idiomatic interpretations should be always available, while the second account makes different predictions. In a head-external relative, the element that moves inside the relative clause is an operator, not an occurrence of *picture*. This account would, therefore, predict that the idiomatic reading should cease to be available if head-external structures could be independently forced.

In the following section, I will argue that Atchan is such a language. Atchan has a VP idiom (conveniently, a translation of ‘take a picture’) with an idiomatically-interpreted verb, and the idiomatic interpretation of that VP is only available when raising derivations are available. When raising is blocked, the idiomatic interpretation is also blocked. This results, I argue, because Atchan does not have matching

relatives. Only raising and head-external relatives are available, so blocking raising forces head-external parses that thereby block idiomatically-interpreted VPs.

5.4 VP idioms in Atchan

In this section, we turn to the Atchan idiom *jã núŋkrã*³¹ ‘take (lit. cut) a picture’:

- (58) *mẽ njã núŋkrã*
 1 SG cut picture
 ‘I took a picture.’ (yap_20220810)

It is worth noting that the verb *jã* has, as far as I am aware, far fewer uses than the English verb *take*.³² Outside of idiomatic constructions, *jã* means ‘cut (all the way through)’:

- (59) a. *mẽ njã nẽ*
 1 SG cut 3 SG.OBJ
 ‘I cut him/her.’ (not: ‘I took a picture of him/her.’) (chr_mar_20220714)
- b. *mẽ njã hró*
 1 SG cut book
 ‘I cut the book.’ (not: ‘I took a picture of the book.’) (chr_mar_20220714)

We also saw this verb previously in (35) in its ‘cut’ meaning.

Atchan *jã núŋkrã*, like its English translation, is the kind of VP idiom in which only the verb is idiomatically interpreted. Evidence that the object is not idiomatic comes from the fact that it can be used without *jã*:

- (60) *ʒulian pɔ núŋkrã*
 J. love picture
 ‘Julianne likes the picture.’ (kou_jea_20220814)

It is important to note that the idiomatic interpretation of *jã núŋkrã* in Atchan is constrained by syntactic constituency, contra the semantic proposal by Kratzer discussed in the previous section. This can be seen by the fact that syntactic manipulations impact the availability of the idiomatic interpretation. One such manipulation is subject dislocation, which disrupts idiom interpretation between the head and the matrix-clause verb.³³

31 All examples here involve *núŋkrã*, though the French loan *fôto* can also be used. Note also that the prenasalization to *njã* seen in the examples below is a phonologically predictable process in the language that results from the preceding nasal pronoun.

32 Note, though, that *jã* does appear in some other idiomatic expressions, like *jã bɛ* ‘celebrate a generation’s official coming-out ceremony’ (lit. ‘cut the rope’).

33 Throughout this section, I again mark the thematic position associated with the head with a trace for readability. Note that on this account, (61b) and (63) are head-external relatives.

- (61) a. mē njā [núŋkrã_j k^hé[́] gba t^ha t_j]
 1SG cut picture COMP dog eat
 ‘I took the picture that the dog ate.’ (kou_jea_20220814)
- b. # mē njā [gba_i núŋkrã_j k^hé[́] a_i t^ha t_j]
 1SG cut dog picture COMP EXTR eat
 Intended: ‘I took the picture that the dog ate.’ (kou_jea_20220814)

Example (61a) exhibits a sentence in which *núŋkrã* ‘picture’ occurs in the head, and *jã* ‘cut’ in the matrix predicate. As we can see, the idiomatic interpretation is available in this example. In itself, this is unsurprising: a non-raising derivation is generally available in Atchan, and that non-raising derivation certainly should support the idiomatic interpretation in (61a).

Importantly, the contrast between (61a) and (61b) shows that the idiom interpretation of Atchan ‘take a picture’ is sensitive to syntactic structure. Namely, the subject dislocation in (61b) disrupts idiom interpretation. On the view advanced here, the unavailability of the idiomatic interpretation in (61b) results because subject dislocation is only available in raising relatives. Since (61b) therefore must be a raising relative, *jã* and *núŋkrã* are not base-generated as a constituent. As a result, the idiom is not licensed. In contrast, a semantic view like Kratzer’s would not capture the unavailability of this reading: the relative clause semantically yields a set of photos regardless of whether or not subject dislocation occurs.

Our fundamental interest here in this section is on sentences like (62):

- (62) mē mpɔ [núŋkrã_j k^hé[́] ʒulian jã t_j]
 1SG love picture COMP J. cut
 ‘I like the picture that Julianne took.’ (kou_jea_20220814)

In this sentence, the verb *jã* ‘cut’ occurs inside the relative clause. As discussed in the previous section, our interest in this section lies in what derivations—Atchan’s raising derivation and/or its non-raising derivation—support the idiomatic interpretation in (62). As I proposed in that section, this type of sentence allows us to test for whether Atchan exhibits matching relative clauses: if matching relatives exist in Atchan, then (62) should have a non-raising parse (namely, matching) in addition to a raising parse.

However, I argue that there is no non-raising parse available in (62). We can see this by applying the extraposition test, looking at another syntactic manipulation and its effect on idiom interpretation. As shown below, while relative clauses with other verbs can extrapose (63a), relative clauses with the idiomatically-interpreted verb *jã* cannot extrapose (63b):

- (63) a. ʒulian c^ha [núŋkrã_j] t^ho [k^hé[́] mē mpɔ t_j]
 J. step picture top COMP 1SG love

- ‘Julianne stepped on the photo that I like.’ (kou_jea_20220814)
- b. # ʒulian c^ha [núŋkrã_j] t^ho [k^hé mē nǰã t_j]
 J. step picture top COMP 1SG cut
 Intended: ‘Julianne stepped on the picture that I took.’
 (kou_jea_20220814)

In Atchan, when the relative clause is extraposed, the idiomatic interpretation is unavailable. This data contrasts with the English *take a picture* data presented in the previous section. This suggests that the only structure available in (62) is a raising structure. If (62) had a matching parse (as is possible for English), we would expect the availability of this other derivation to make extraposition available in (63b).

From this, we can conclude that (62) does *not* have a non-raising parse. Instead, it is unambiguously derived via raising. Specifically, I have argued that (62) cannot have a matching parse: if it had a matching parse, then we would not expect the unavailability of the idiomatic reading in (63b). More broadly, what this discussion suggests is that there is no matching derivation of Atchan relatives. If a matching derivation were ever available in Atchan, there is no principled reason why it should be unavailable in (62).

Instead, it seems, the non-raising derivation in Atchan is not a matching derivation but, rather, a head-external one. That is, I propose that the structure of Atchan non-raising relatives like (61a) is a head-external one, allowing for the generation of *jã* and its object as a constituent. Atchan, therefore, generally has a two-way ambiguity in how relative clauses are derived, but matching is not an available option.

On this account, each relative clause in Atchan has exactly one head, either internal to or external to the relative clause. This account, therefore, predicts that the relative-clause head should only be able to license one idiom chunk: a head-external relative should be able to license idiomatic *jã* in the matrix clause, and a raising relative should license idiomatic *jã* in the matrix clause.³⁴ It should not be possible, however, to have idiomatically-interpreted *jã* in both clauses; see [Salzmann 2019](#) for discussion of this kind of phenomenon. Unfortunately, this prediction must await future testing.

5.5 An overall picture

We have arrived at the conclusion that Atchan has raising and head-external relatives but no matching relatives. Recall that one motivating data point that led us along this path was the unavailability of head-subject word order, as shown below (repeated from (52b):

³⁴ I thank Martin Salzmann for raising this prediction.

- (64) * mẽ ɲ^wu [ɔje_j aká_i k^hẽ a_i pɔ t_j]
 1SG see.PFV woman A. COMP EXTR love
 Intended: ‘I saw the woman who Aka loves.’ (yap_20220929)

Earlier, I argued that this data point provides evidence against a hybrid account with shared peripheral structure, à la Krapova’s (2010) approach to Bulgarian. However, we have not yet explained why this data point is the way it is. Namely, there are two salient possible derivations consistent with the view developed so far that could generate this linear order, contrary to fact: first, this linear word order could in principle be derived via a head-external structure; and second, the raising head could undergo additional movement or reprojection. In this section, I will discuss each of these possibilities in turn.

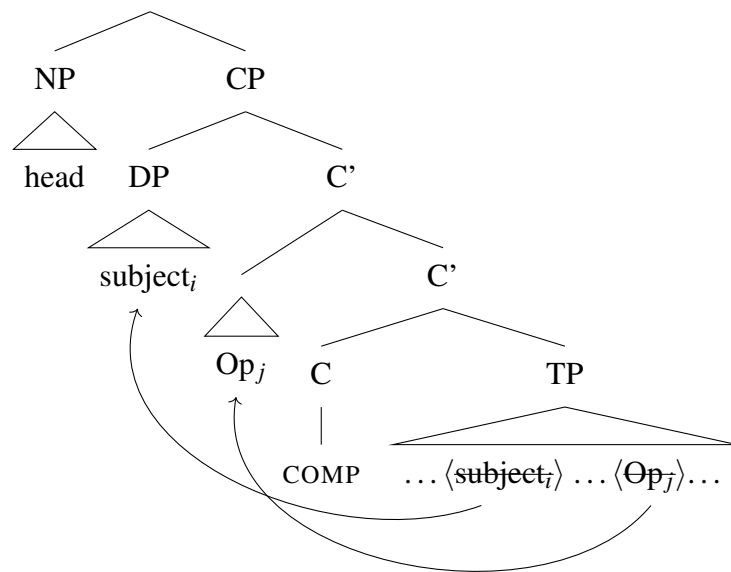
5.5.1 Subject dislocation and head-external relatives

First, the analysis to this point appears to permit the derivation of the ungrammatical structure in (64) as a head-external relative. Recall from §4.2 that I proposed two C heads that can derive relativization in Atchan, repeated below from (42):

- (65) a. C [uREL*]
 b. C ① [uD+X*] ② [uD+REL*]

In that section, I proposed that subject-dislocation relatives are derived by the complex C head in (65b). Crucially, applying the complex C head in (65b) in a head-external structure allows us to derive the unavailable word order in (64). In such a structure, *aka* would be the dislocated subject, with a null operator undergoing A’-movement inside the relative clause. This derivation is illustrated in the structure below:

(66)



Since the operator (by definition) is not pronounced, the availability of this derivation incorrectly predicts the acceptability of the head-subject surface string in (64). Since the relative-clause CP is hypothesized to adjoin to the NP in a head-external relative, we cannot exploit a selectional mechanism to rule out this derivation.

To rule out this derivation, it would be sufficient to claim that the complex C head cannot move a null operator (only an overt head). This is the claim that I wish to make, with the fundamental explanation coming from the size of the head. In our previous discussion, I noted that the complex C head in (65b) can only move syntactically large heads. I showed there that the head in an Atchan raising relative can be larger than NP and bear demonstrative- and quantifier-related material. For simplicity, I assume that the raising head in Atchan is a full DP (and the second probe's specification reflects this assumption), though a different category between N and D could also be invoked in this probe's specification with no consequence.

I want to suggest that it is precisely this requirement, that the head moved by the complex C head in (65b) be a DP, that makes that complex C head unable to derive a head-external relative. Specifically, I adopt the view that null operators are NPs, rather than DPs. This position has been argued by Adesola (2005, 2010) for Yoruba (Kwa, Nigeria), on the basis that operators cannot behave as DPs to fulfill various syntactic requirements. Specifically, Adesola argues that operators in Yoruba cannot move to Spec,TP to fulfill T's EPP property. Instead, a person- and number-invariant expletive is inserted in constructions like subject focus (which he argues involves operator movement in Yoruba):

- (67) Èyin ni Op ó ra àpo
 2PL be 3SG buy bag
 ‘You were the ones who bought a bag.’ (Adesola 2010:(24a))

Adesola conjectures that null operators might lack a D feature (i.e., for my purposes, be NPs) cross-linguistically. A similar claim of NP-hood has been made for the operator in English *tough*-constructions by Nakagawa (2000). I propose that in Atchan, just like in Yoruba, operators are NPs (with no additional nominal structure). Accordingly, a null operator cannot be moved by the probe in (65b): the second component cannot find and move an NP. This, I argue, rules out the problematic derivation in (66), on the reasonable assumption that failure to move the relative-clause head will cause a (syntactic or semantic) derivational crash.

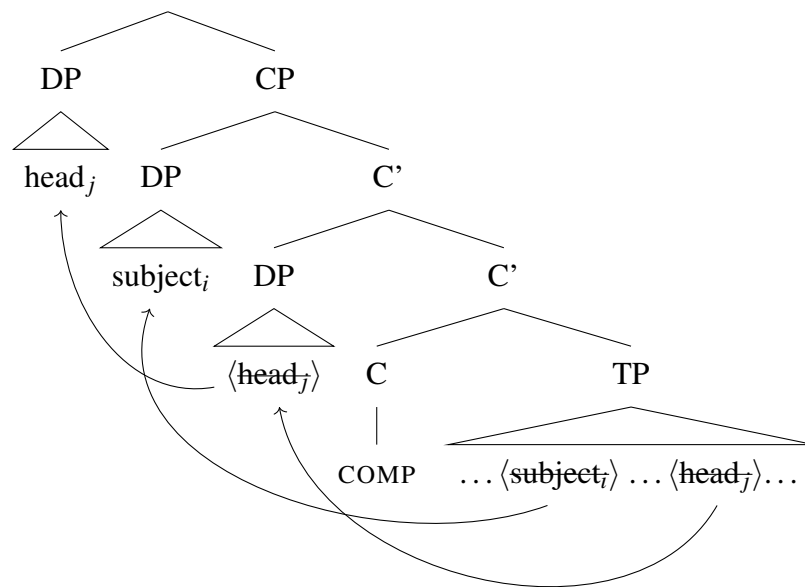
Since the complex C head in (65b) cannot move a null operator, the only way to move that operator (i.e., to derive a head-external relative) is to use the simplex C head in (65a). That simplex C head only probes for a [REL]-bearing item (regardless of its syntactic size), so it can move either an overt head or a null operator. This permits the derivation of head-external relatives in principle, and the derivation of raising relatives with no subject dislocation, but rules out the combination of operator movement and subject dislocation. The end result is that the head-subject word order is in a sense ruled out by a conspiracy of two factors. On one hand, null operators are too small to be moved by the complex C head; on the other, subject dislocation occurs at the same time as (and is, in a sense, parasitic on) movement of large heads.

5.5.2 Raising and reprojection

A final way to derive the unattested subject-head order involves positing additional movement in Atchan raising relatives. That is, CP-external, reprojecting movement of the raising head, as shown below, would be a way to derive the unattested head-subject word order.³⁵

³⁵ One additional complication of this structure is that the raising head is a DP; in the case of a quantified head, the head and relative clause would not form a constituent to the exclusion of the head.

(68)



On some views, the interpretation of raising relatives requires CP-external movement of the head, in a way similar to the one sketched in (68). Two salient predecessors of this view are, on one hand, Bhatt's (2002) analysis of English raising relatives, and on the other, Williamson's (1987) and Cole's (1987) analyses of internally-headed relatives in, respectively, Lakhota and the Quechuan languages Imbabura and Ancash. In their analysis of internally-headed relative clauses, the latter authors both propose that relative-clause heads undergo covert movement outside of the relative clause (i.e., covert reprojection). The idea is that this movement is obligatory to facilitate interpretation. If we were to adopt this view, adapting it to *overt* movement in Atchan, the ungrammaticality of head-subject word order is slightly mysterious, as that is what is straightforwardly predicted by (68). However, as a reviewer notes, we could rule out this derivation by appealing to locality considerations, i.e., a view on which the dislocated subject is 'too local' and blocks further movement of the head.

While this story would work to rule out (68), I believe the problem with CP-external movement of the head in Atchan is more fundamental. First, note that the locality-based story that we would have to entertain would, without further assumptions, entirely rule out subject dislocation in Atchan. If heads must move further for interpretation, but subject dislocation blocks this further movement, subject dislocation should necessarily give rise to uninterpretable structures, contrary to fact. The only way to maintain this view, I believe, is to commit to a view in which reprojection in Atchan can be either overt or covert, and on which only *overt* repro-

jection is subject to locality constraints (and intervention by the dislocated subject). This works empirically, since the further movement of the head in (68) would now have to be covert rather than overt. However, since other work on West African languages has shown that covert movement is subject to the same locality constraints as overt movement (e.g., Sulemana 2019 on Buli; cf. also Korsah & Murphy 2020 on Asante Twi true *wh*-in-situ), I find this view a bit unsatisfying.³⁶

Instead, what I would like to suggest is that reprojection is neither obligatory for raising-relative interpretation, nor freely applicable cross-linguistically. As Bhatt (2002) notes, reprojection is a rather unusual type of movement. While Bhatt ultimately argues that reprojection is empirically necessary in languages like English, his empirical arguments do not apply in Atchan. Bhatt, following his earlier work in Bhatt 1999, argues that reprojection-style movement is necessary in other English structures like those given below:

- (69) a. the [NP [NP girls]_i [A_{SP}P *t*_i constructing the robot]]
 b. the [NP [NP books]_i [PP *t*_i on the table]] (Bhatt 2002: (69b-c))

On this basis, he contends that reprojection *must* exist in English, and therefore there is little theoretical cost to proposing that reprojection exists also in English relative clauses.

To the best of my knowledge, these kinds of constructions do not exist in Atchan. I have found no examples of reduced relative clauses like (69a), and Atchan does not permit PP adjuncts to noun phrases. Expressing ‘the wall behind me,’ for example, requires a full relative clause with locational verb:

- (70) a. é-ŋk^hú-p^hɔ_i k^hé a_i ɓa mē mǎŋji
 CM-house-skin COMP EXTR be.at 1SG behind
 ‘the wall behind me’ (lit. ‘the wall that is located behind me’)
 b. *é-ŋk^hú-p^hɔ mē mǎŋji
 CM-house-skin 1SG behind
 Intended: ‘the wall behind me’ (20241012_kou)

Accordingly, there is at this point no empirical evidence in support of reprojection-type movement in Atchan. Instead, I think the better claim is that (overt) reprojec-

36 A different way to maintain the view that overt reprojection is obligatory for the interpretation of raising relatives in Atchan (and that dislocated subjects block reprojection) would be to claim that Atchan makes use of multiple relative-clause interpretation mechanisms. Specifically, we would be led to a view on which subject-dislocation relatives cannot use the raising-relative interpretation mechanisms. As a result, we would predict that subject-dislocation relatives would differ fundamentally in their semantics from those that do not (and hence can undergo reprojection). As discussed earlier in §4.3, however, this is not the case. Quantified heads in subject-dislocation Atchan relatives are interpreted high, taking the intersection of the head and relative clause together as their restriction. If ‘standard’ raising-relative interpretations in Atchan required reprojection, and the dislocated subject blocked reprojection, those high interpretations should be unavailable.

style onward movement of the head outside the relative-clause CP simply does not occur in Atchan.³⁷ The consequence is that a syntactic analysis along the lines of Kayne 1994 or Bianchi 1999 is better suited to Atchan raising relatives than is an analysis along the lines of Bhatt 2002. More broadly, the head-subject word order in Atchan raising relatives is ungrammatical simply because it is underivable: there is no mechanism in Atchan that can cause the head to undergo additional movement beyond the Spec,CP position that it initially raises to.

With this, then, we have ruled out all possible derivations of the unattested head-subject word order in Atchan. That word order cannot be derived via a hybrid or matching structure, because Atchan does not have that structure. It cannot be derived via a head-external structure because the particular head that derives subject dislocation cannot move null operators. Finally, it cannot be derived via additional movement of the head in a raising relative because there is simply no mechanism that can further move the head.

6 Conclusion

In this paper, I have argued for the presence of two separate relative-clause structures in Atchan, a raising structure and a head-external one. I have shown that the two structures must be separately derived, and that a matching derivation is unavailable in Atchan. I have argued that a unified hybrid account is unavailable in Atchan, showing that unified hybrid accounts are not universally accessible. Instead, I argue that Atchan has head-external relatives in addition to raising ones. The argumentation in favor of the head-external derivation in this paper relies on two factors: on one hand, I used extraposition to argue for the availability of a non-raising derivation, and used particular types of idioms to argue against the availability of the matching derivation. To my knowledge, the application of this pair of diagnostics in this way is novel. This paper more broadly argues for the cross-linguistic availability of the head-external derivation, which has been argued to be unavailable in languages like English (Safir 1999, Bhatt 2002). It also supports the reality of null operators as syntactically distinguished items. The Atchan data supports Adesola's (2005) proposal that null operators are, cross-linguistically, not DPs.

On the view that I have argued for, Atchan has raising and head-external derivations that are, in a sense, completely separate. One natural large-scale question is what rules out the combination of a raising relative that adjoins to an external head: that is, why exactly is a matching-like structure unavailable? The explanation I find most compelling is that this unavailability is due to a fundamentally semantic issue, which results from the large size of raising heads in Atchan. As discussed

³⁷ It remains possible that the head in *all* raising relatives might undergo covert reprojection, with no intervention by the dislocated subject. At this point, I am not sure how this claim could be falsified.

previously, I have argued elsewhere in [Jarvis 2023a](#) that quantified heads in Atchan raising relatives are interpreted inside the relative-clause CP. One upshot of this discussion is that raising relative CPs in Atchan are not of type $\langle e, t \rangle$, unlike in languages like English. A consequence of this is that raising CPs in Atchan might be unable to compose with external heads for semantic reasons (i.e., a raising relative and external head cannot combine via Predicate Modification). If this explanation is on the right track, then we might expect to see a cross-linguistic correlation between syntactically large heads (i.e., DPs or similar) and the absence of matching relatives.

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