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Cyclicity and Connectivity in Nez Perce Relative Clauses

Amy Rose Deal

This article studies two aspects of movement in relative clauses, focusing on evidence from Nez Perce. First, I argue that relativization involves cyclic Ā-movement, even in monoclausal relatives: the relative operator moves to Spec,CP via an intermediate position in an Ā outer specifier of TP. The core arguments draw on word order, complementizer choice, and a pattern of case attraction for relative pronouns. Ā cyclicity of this type suggests that the TP sister of relative C constitutes a phase—a result whose implications extend to an ill-understood corner of the English *that*-trace effect. Second, I argue that Nez Perce relativization provides new evidence for an ambiguity thesis for relative clauses, according to which some but not all relatives are derived by head raising. The argument comes from connectivity and anticonnectivity in morphological case. A crucial role is played by a pattern of inverse case attraction, wherein the head noun surfaces in a case determined internal to the relative clause. These new data complement the range of existing arguments concerning head raising, which draw primarily on connectivity effects at the syntax-semantics interface.

Keywords: head raising, phase theory, PF interface, connectivity, case attraction, inverse case attraction

1 Introduction

Externally headed relative clauses feature a single nominal expression in apparent correspondence with two argument positions. One is external to the relative CP, in the matrix clause, and it is here that we find the ‘‘head’’ (or ‘‘pivot’’) NP. The other is internal to the relative CP, and here we typically find only a gap. The connection between this gap and the external head has for several decades placed relative clauses at the core of the study of movement dependencies. One major strand of this research has focused on movement of the relative operator from an argument position to the CP edge. Another, in the wake of influential work by Kayne (1994), has focused on movement of the head NP itself. On raising analyses, the head NP originates within the relative clause with the relative pronoun as its determiner. Ā-movement of the relative operator DP to the clause edge is followed by movement of the head NP to the left of the relative pronoun.

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In this article, I investigate these two types of movement through the lens of Nez Perce, a Sahaptian language of the Columbia River plateau (Idaho, Washington, and Oregon, USA). There are two notable features of restrictive relatives in this language, each of which casts light on one aspect of movement in relativization. The first is that relative pronouns freely alternate between two positions. One, featured in the (a) examples of (1) and (2), is the familiar position between the complementizer and the NP head. The other, featured in the (b) examples, is to the right of the complementizer, apparently inside the relative clause. Consultants perceive the variants to be interchangeable.[1]

(1) a. picpic **yoxˆ** ke kine __ hi-pinmix-saqa
cat.NOM RP.NOM C here __ AGR-sleep-TAM
'the cat that was sleeping here'
b. picpic ke **yoxˆ** kine __ hi-pinmix-saqa
cat.NOM C RP.NOM here __ AGR-sleep-TAM
'the cat that was sleeping here'

(2) a. 'iniit **yoxˆ** ke Jack hi-hi-ce 'iin hani-ya __
house.NOM RP.NOM C Jack.NOM AGR-say-TAM 1SG.NOM make-TAM __
'the house that Jack says he built'
b. 'iniit ke **yoxˆ** Jack hi-hi-ce 'iin hani-ya __
house.NOM C RP.NOM Jack.NOM AGR-say-TAM 1SG.NOM make-TAM __
'the house that Jack says he built'

Example (2b) shows that the lower position of the relative pronoun need not be within the minimal finite clause containing the gap. That suggests that the alternation is between two Ā-positions for relative pronouns. I argue that these are Spec,CP, in the (a) examples, and a position on the edge of the relative TP, in the (b) examples. Movement of the relative operator passes cyclically through the lower Ā-position on its way to the higher one. The alternation in relative pronoun position reflects two possible ways the resulting Ā-chain may be spelled out.

The motivation for cyclic Ā-movement typically involves considerations of locality. If the relative operator must move through the TP edge on its way to the CP edge, that suggests that the TP complement of relative C delimits a phase. It turns out that additional evidence for this claim can be marshaled from an old puzzle about *that*-trace effects in English. As Bresnan (1972) observed, these effects are notably absent in the immediate environment of relative C.

[1] The following abbreviations are used in Nez Perce glosses: ACC = accusative case (equivalent to the case glossed as 'objective' in Crook 1999, Deal 2010a et seq.); AGR = agreement, AGT = agentive nominalization; C = complementizer; CAUSE = causative; DIST = distributive; DUNNO = speaker ignorance marker; ERG = ergative case; FREQ = frequentative deverbal adjective suffix; GEN = genitive case; IMP = imperative; LOC = locative case; NOM = nominative case; PART = participle; RP = relative pronoun; TAM = tense/aspect/mood; Y.N = yes/no question particle; μ = functional head present in possessor raising (Deal 2013a); 1SG (etc.) = first person singular (etc.). Features of missing arguments are glossed according to the speaker's translation. Word order in Nez Perce is highly flexible (Rude 1992); for ease of reading, gaps and null arguments are presented in an SVO order.

(3) a. The farm *(that) __ grew the rutabaga is nearby.
b. Machines *(that) __ add have been used for thousands of years.

Obviation of the *that*-trace effect in this environment turns out to follow precisely as expected, once the general theory of *that*-trace effects proposed by Pesetsky and Torrego (2001) is combined with the phasal architecture of relative clauses motivated by the Nez Perce patterns in (1)–(2). A crucial role in the explanation is played in particular by the fact that TP constitutes a phase in proximity to relative C, but not in other environments. The conclusion is thus in line with other work suggesting that phase-inducing properties of functional heads are in part determined by syntactic context (Den Dikken 2007, Gallego 2007, Bošković 2014).

The second notable feature of Nez Perce relative clauses speaks to questions of NP-movement, the key ingredient to the raising analysis and the subject of a significant ongoing debate. Three main points of view in this debate should be recognized. One, proposed by Kayne (1994) and subsequently developed in depth by Bianchi (1999, 2000a,b), maintains that the head of a relative clause is always generated internal to the relative clause; the derivation of externally headed relatives always involves NP-movement. The second is directly the opposite, maintaining a CP-external origin for the relative clause head and rejecting all forms of the raising analysis. This has been defended by Borsley (1997, 2001). The third approach maintains that both head-raising and non-head-raising structures are required for relative clauses, and indeed that relative clauses are often structurally ambiguous. That conclusion has been defended on a variety of grounds by Åfarli (1994), Sauerland (1998), Bhatt (2002), Hulsey and Sauerland (2006), Szczegielniak (2006), Harris (2008), and Sichel (2014).

What makes Nez Perce especially relevant to this debate is its system of case marking, which provides a morphosyntactic diagnostic for connectivity between the head NP and the relative-clause-internal gap. Relative clauses in Nez Perce show a mixture of connectivity and anticonnectivity in this dimension. On the one hand, for in-situ DPs, connectivity effects in case marking are absent: the marking of the head noun is determined by the case assigned to the overall DP in the matrix. This conforms to the crosslinguistically typical pattern, which is compatible with analyses both with and without NP-raising (Bianchi 1999, De Vries 2002).

(4) Mine hii-we-s **samx̂** ko-nya kex *pro*$_{subj}$ 'a-sayqi-ca __?
where AGR-be-TAM shirt.NOM RP-ACC C PRO.1SG AGR-like-TAM __
'Where is the shirt that I like?'

On the other hand, it is possible to find case connectivity between the head NP and the clause-internal gap under particular syntactic circumstances. Nez Perce allows DPs to be left-dislocated in a hanging-topic left-dislocation (HTLD) construction. When a nominal containing a relative clause is left-dislocated in this way, the head of the relative clause may surface in a morphological case that could only have been determined internal to the relative clause. Thus, in (5), the head noun surfaces in the accusative case.

(5) [$_{DP}$ **Samax̂-na** ko-nya kex *pro*$_{subj}$ 'a-sayqi-ca __]$_1$, mine *pro*$_1$ hii-we-s?
[shirt-ACC RP-ACC C PRO.1SG AGR-like-TAM __] where PRO.3SG AGR-be-TAM
'The shirt that I like, where is it?'

This is a pattern of ''inverse case attraction,'' attested in various extinct Indo-European languages and discussed by Bianchi (1999) as key evidence for the head-raising approach. This is not the only type of case pattern available in Nez Perce HTLD contexts, however. It turns out that the very same type of dislocation that supports the case pattern in (5) also supports a pattern where the head NP behaves for purposes of case as though it was generated *outside* the relative clause. This, I argue, speaks to the position of those who have defended both head-raising structures and non-head-raising alternatives as coexisting possibilities for relative clauses.

The article is structured as follows. In section 2, I introduce the basic facts of relativization in Nez Perce, emphasizing syntactic and semantic commonalities between clauses that vary in relative pronoun position. This prepares the ground for section 3, where I introduce the core analysis of the alternation in (1)–(2): the relative operator moves cyclically through the TP edge on the way to the CP edge, and either the copy in TP or the one in CP may be pronounced. The syntactic uniformity of relative clauses explains the commonalities noted in section 2. Together with principles of chain interpretation at PF, the analysis also explains two important differences that correlate with relative pronoun position. These concern case attraction of the relative pronoun and phonological phrasing of the relative pronoun with the complementizer. In section 4, I show how the involvement of TP in particular opens the door to an explanation of apparently unrelated facts, such as the English pattern in (3), and I consider the consequences for an expanded CP structure and for the theory of locality.

Section 5 then pivots to the case facts in light of the analysis of relative pronoun position. I begin by reviewing classical, matching, and raising analyses for relative clauses, and I show (following Bianchi (1999) and De Vries (2002)) how the apparent challenge to raising from case patterns like (4) may be neutralized. The key ingredient is a mechanism for assignment of case to the head NP relatively late in the derivation. The expectation is that case connectivity will arise in relative clauses only in syntactic environments where this type of mechanism is inapplicable. In section 6, I show that left-dislocation furnishes such an environment, paving the way for a purely morphosyntactic argument for NP-movement. At the same time, however, left-dislocation structures provide evidence of a coexisting structure for relative clauses in Nez Perce that does not involve NP-raising. Section 7 assembles the consequences and concludes the article.

2 The Basics

This section sets out the fundamentals of Nez Perce relative clause structure, grouped into four general topics. First is the evidence that relative pronouns undergo Ā-movement, regardless of their surface position. Second is a set of additional syntactic and semantic similarities between clauses varying in relative pronoun position. Third and fourth are morphological matters, concerning, respectively, the relative pronoun and the complementizer.

2.1 Ā-Movement

As in English, externally headed relative clauses in Nez Perce always occur to the right of the external head: *samx̂* 'shirt' in (6), *picpic* 'cat' in (7). There is a corresponding gap in the relative

clause. The (a) and (b) examples vary the relative order of the relative pronoun (boldfaced) and the complementizer. (The precise form of the complementizer—for example, *ke*, *kex*, *kem*—is discussed in section 2.4.)

(6) a. Mine hii-we-s samx̂ **ko-nya** kex *pro*$_{subj}$ 'a-sayqi-ca __?
where AGR-be-TAM shirt.NOM RP-ACC C PRO.1SG AGR-like-TAM __
'Where is the shirt that I like?'

b. Mine hii-we-s samx̂ kex **ko-nya** *pro*$_{subj}$ 'a-sayqi-ca __?
where AGR-be-TAM shirt.NOM C RP-ACC PRO.1SG AGR-like-TAM __
'Where is the shirt that I like?'

(7) a. Mine hii-we-s picpic **ko-nim** kex __ hi-ip-e'ni-s *pro*$_{obj}$ cuu'yem?
where AGR-be-TAM cat.NOM RP-ERG C __ AGR-eat-μ-TAM PRO.1SG fish.NOM
'Where is the cat that ate my fish?'[2]

b. Mine hii-we-s picpic kex **ko-nim** __ hi-ip-e'ni-s *pro*$_{obj}$ cuu'yem?
where AGR-be-TAM cat.NOM C RP-ERG __ AGR-eat-μ-TAM PRO.1SG fish.NOM
'Where is the cat that ate my fish?'

The gap may be found one or more clauses away from the relative head. This behavior, too, holds irrespective of relative pronoun placement, as attested by (8a) and (8b).[3]

(8) a. Kii hii-we-s 'iniit [$_{CP}$ **yox̂** ke Jack hi-hi-ce
this.NOM AGR-be-TAM house.NOM [RP.NOM C Jack.NOM AGR-say-TAM
[$_{CP}$ 'iin hani-ya __]].
[1SG.NOM make-TAM __]]
'This is the house that Jack says he built.'[4]

b. Ku'nu 'ituu-wecet *pro*$_{subj}$ hi-'nahpayk-a hipt [$_{CP}$ kex **ko-nya** *pro*$_{subj}$
DUNNO what-reason PRO.3SG AGR-bring-TAM food.NOM [C RP-ACC PRO.1SG
'a-w-caqa *pro*$_{obj}$ [$_{CP}$ weet'u *pro*$_{subj}$ 'a-himkasayq-ca __]].
AGR-tell-TAM PRO.3SG [NEG PRO.1SG AGR-like.taste-TAM __]]
'I don't know why he brought food that I told him I don't like.'

Relative clauses give rise to island effects of the familiar kinds; the relevant judgments do not vary with relative pronoun position. Relativization itself shows sensitivity to various islands—a coordinate structure in (9), for instance.

[2] This example involves object possessor raising within the relative clause; the verbal morpheme μ is a symptom. See section 3.3 and Deal 2013a.

[3] Note that Nez Perce allows two case patterns in transitive clauses: NOM-NOM and ERG-ACC. These occur in the most deeply embedded clauses in (8a) and (8b), respectively, with the result that the object relative pronoun bears NOM in (8a) and ACC in (8b). For the minimal pair involving (8a), see (2). On the case patterns of Nez Perce, see Deal 2010b: chaps. 5–8, 2015c.

[4] The subject of the most deeply embedded clause here is a shifty indexical. See Deal 2014.

(9) *Mine hii-we-s picpic {**yox̂** ke / ke **yox̂** } ['eekeex kaa __]
where AGR-be-TAM cat.NOM {RP.NOM C / C RP.NOM} [magpie.NOM and __]
hii-we-s kasłcíim?
AGR-be-TAM same.size
'Where is the cat that the magpie and __ are the same size?'

Relativization out of an adjunct clause shows the subject/object asymmetry at one point attributed to the Empty Category Principle. The object of a clausal adjunct may be relativized, but the subject may not.

(10) a. Cepeepy'ux̂tin' hii-we-s hipt {**yox̂** kex / kex **yox̂** } pro_{subj}
pie.NOM AGR-be-TAM food.NOM {RP.NOM C / C RP.NOM} PRO.1SG
liloy-no'qa [c'alawí pro_{subj} hani-yo'qa __].
be.happy-TAM [if PRO.1SG make-TAM __]
'Pie is a food that I would be happy if I could make __.'

b. *'Isii hii-we-s haama {**ko-nim** kem / kem **ko-nim**} pro_{subj}
who.NOM AGR-be-TAM man.NOM {RP-ERG C / C RP-ERG } PRO.2SG
liloy-no'qa [c'alawí __ paa-ni-yo'qa cepeepy'ux̂tis-ne]?
be.happy-TAM [if __ AGR-make-TAM pie-ACC]
'Who is the man that you would be happy if __ made pies?'

And the relative clause constitutes an island for additional Ā-movement.

(11) *'Ituu$_1$ pro_{subj} 'e-'pewi-se 'aayat-ona [$_{CP}$ {**yox̂**$_2$ ke / ke **yox̂**$_2$ } __$_2$
what.NOM PRO.2SG AGR-look.for-TAM woman-ACC [{RP.NOM C / C RP.NOM} __$_2$
ha-ani-tato __$_1$]?
AGR-make-TAM __$_1$]
'What$_1$ are you looking for the woman who makes __$_1$?'

These facts are as expected if Nez Perce relative pronouns always undergo Ā-movement—movement that is unbounded and island-sensitive—regardless of the position in which the relative pronoun surfaces.

2.2 Other Facts Insensitive to Relative Pronoun Position

There are several additional important ways in which the syntax and semantics of Nez Perce are insensitive to relative pronoun position. First, relative clauses may be coordinated, regardless of relative pronoun placement.

(12) Mine hii-we-s samx̂ [$_{CP}$ kex **ko-nya** 'iin 'a-sayqi-ca __] kaa
where AGR-be-TAM shirt.NOM [C RP-ACC 1SG.NOM AGR-like-TAM __] and
[$_{CP}$ **ko-nya** kem 'iim weet'u 'a-sayqi-ca __]?
[RP-ACC C 2SG.NOM NEG AGR-like-TAM __]
'Where is the shirt that I like and that you don't like?'

This suggests that both types of relative clauses constitute CPs, as indicated.

Second, relative clauses may be stacked in the familiar way, and this is possible even in cases where the two clauses differ in relative pronoun placement.

(13) Sepe-x-nim *pro*$_{obj}$ cepeeletp'et [$_{CP}$ **yox̂** kem *pro*$_{subj}$ hani-ya __]
CAUSE-see-TAM PRO.1SG picture.NOM [RP.NOM C PRO.2SG make-TAM __]
[$_{CP}$ kex **ko-nya** *pro*$_{subj}$ 'a-sayqi-ca __]!
[C RP-ACC PRO.1SG AGR-like-TAM __]
'Show me the picture that you made that I like!'

Finally, on a semantic note, the alternation in relative pronoun position is possible in both restrictive and nonrestrictive relative clauses. The primary focus of this article is on restrictive relatives; for the examples we have seen so far, the translations accepted and produced by consultants are suggestive of a restrictive interpretation. In (14), where a restrictive interpretation is clearly favored, both orders remain possible.

(14) Context: I want a cat that can kill mice, since my own cats don't do that. Any mouse-catching cat will do.
Pro$_{subj}$ wewluq-se picpic {**yox̂** ke / ke **yox̂** } __ hii-we-s ta'c
PRO.1SG want-TAM cat.NOM {RP.NOM C / C RP.NOM} __ AGR-be-TAM good
cepeqick-e'weet laqas-na.
catch-AGT mouse-ACC
'I want a cat that is a good mouse-catcher.'

The same holds when a nonrestrictive interpretation is favored, as in (15); restrictiveness has no effect on relative pronoun position.

(15) Jill, {**ko-nim** kex / kex **ko-nim**} __ hi-cewcew-nuu-me *pro*$_{obj}$, hii-we-s
Jill.NOM {RP-ERG C / C RP-ERG } __ AGR-call-APPL-TAM PRO.1SG AGR-be-TAM
saykiptaw'aat.
doctor.NOM
'Jill, who called me, is a doctor.'

These data are indicative of the more general fact that consultants do not perceive a semantic difference corresponding with relative pronoun position.

2.3 Morphology of the Relative Pronoun

Relative pronouns in Nez Perce are drawn from the series of distal demonstratives and deictic elements. As arguments, these elements show distinctions of number and case, both as relative pronouns and as demonstratives. Table (16) shows the paradigm for the core cases of nominative, ergative, and accusative; the singular forms of the three cases are exemplified above. Table (17) lists the major adjunct relative pronouns.

(16) *Core relative pronouns*

	Singular	Plural	
Nom	yox̂	yox̂me	
Erg	konim	konmam	
Acc	konya	konmana/yoxmene	[idiolectical variation]

(17) *Adjunct relative pronouns*

Time	kaa	(lit. 'then')
Location	kona	(lit. 'there')
Manner	ku'us	(lit. 'thus')

With one important exception, to be discussed in section 3.2, the case of a relative pronoun in an argument relative corresponds to the case associated with the Ā gap. That is accusative in (18), ergative in (19), and nominative in (20).

(18) Mine hii-we-s samx̂ **ko-nya** kex pro_{subj} 'a-sayqi-ca __?
where AGR-be-TAM shirt.NOM RP-ACC C PRO.1SG AGR-like-TAM __
'Where is the shirt that I like?'

(19) Mine hii-we-s picpic **ko-nim** kex __ hi-ip-e'ni-s pro_{obj} cuu'yem?
where AGR-be-TAM cat.NOM RP-ERG C __ AGR-eat-μ-TAM PRO.1SG fish.NOM
'Where is the cat that ate my fish?'

(20) Mine hii-we-s picpic **yox̂** ke kine __ hi-pinmix-saqa?
where AGR-be-TAM cat.NOM RP.NOM C here __ AGR-sleep-TAM
'Where is the cat that was sleeping here?'

Note that there is no apparent difference in Nez Perce between Ā-movement of ergatives and Ā-movement of nonergatives. This pattern makes Nez Perce a ''morphologically'' ergative language in the sense of Dixon 1979 and Bittner and Hale 1996. Both when the relative pronoun is accusative, as in (21a), and when it is ergative, as in (21b), the verb is expressed in its ordinary transitive form.

(21) a. Pro_{subj} 'e-'pewi-se cepeepy'ux̂tis-ne ko-nya ke 'aayato-nm
PRO.1SG AGR-look.for-TAM pie-ACC RP-ACC C woman-ERG
paa-ny-a __.
AGR-make-TAM __
'I'm looking for the pie that the woman made.'

b. Pro_{subj} 'e-'pewi-se 'aayato-na ko-nim ke __ paa-ny-a ki-nye
PRO.1SG AGR-look.for-TAM woman-ACC RP-ERG C __ AGR-make-TAM this-ACC
cepeepy'ux̂tis-ne.
pie-ACC
'I'm looking for the woman who made this pie.'

The same holds in *wh*-questions: verbs surface in their ordinary transitive form, regardless of which argument undergoes Ā-movement (Deal 2010b). Morphology of the relative pronoun or *wh*-word does not affect verbal morphology.

2.4 Morphology of the Complementizer

The final topic for this introductory section is the complementizer *ke*, a word that shows a small amount of inflection. It shows agreement with first and second person arguments in the clause below it, thus taking the suffix *-x*, for first person, in (22), and *-m*, for second person, in (23). The form of agreement is identical for subjects and for objects; this is a pattern of ''promiscuous'' (Béjar 2003) or ''omnivorous'' (Nevins 2011) agreement.

(22) a. cickan yoxˆ ke-x pro_{subj} 'ew-'nii-ye pro_{obj} __
blanket.NOM RP.NOM C-1 PRO.1SG AGR-give-TAM PRO.3SG __
'the blanket that I gave to her'
b. cickan yoxˆ ke-x Beth-nim hi-'nii-ye pro_{obj} __
blanket.NOM RP.NOM C-1 Beth-ERG AGR-give-TAM PRO.1SG __
'the blanket that Beth gave to me'

(23) a. cickan yoxˆ ke-m pro_{subj} Beth-ne 'ew-'nii-ye __
blanket.NOM RP.NOM C-2 PRO.2SG Beth-ACC AGR-give-TAM __
'the blanket that you gave to Beth'
b. cickan yoxˆ ke-m Beth-nim hi-'nii-ye pro_{obj} __
blanket.NOM RP.NOM C-2 Beth-ERG AGR-give-TAM PRO.2SG __
'the blanket that Beth gave to you'

To account for this behavior, I propose in Deal 2015a that *ke* contains a ϕ-probe specified for particular person features (Béjar 2003, Béjar and Rezac 2009, Nevins 2011, Preminger 2011). The features in question are revealed in clauses with both first and second person arguments. Here, structure matters: C agrees with both a first person subject and a second person object, (24), but only the subject when the subject is second person, (25).

(24) cickan yoxˆ ke-m-ex pro_{subj} 'inii-ye pro_{obj} __
blanket.NOM RP.NOM C-2-1 PRO.1SG give-TAM PRO.2SG __
'the blanket that I gave to you'

(25) cickan yoxˆ ke-m pro_{subj} pii-'ni-me pro_{obj} __
blanket.NOM RP.NOM C-2 PRO.2SG AGR-give-TAM PRO.1SG __
'the blanket that you gave to me'

This asymmetry suggests that C bears a specification for the feature [addressee]; it probes no further down than a second person argument. However, it collects all ϕ-features it encounters until probing stops. The mechanics of this collection of features are discussed in Deal 2015a.

Person-based, omnivorous agreement of the type just demonstrated occurs in the language with a variety of clause-initial, functional elements. One, in addition to *ke*, is the yes/no particle *weet*; another is the element *ku*' that introduces certain conditional clauses. The agreement properties of these elements are quite distinct from those of verbs and nouns. Verbs agree nonomnivorously with subjects and with objects, using distinct agreement morphemes (Deal 2015b). Nouns optionally agree with their modifiers in number and case (Deal 2016); they do not agree with

their arguments, such as possessors. A reasonable generalization to be made is that person-based, omnivorous agreement is restricted in Nez Perce to the category C.

3 Positions for Relative Pronouns

The patterns reviewed in the previous section emphasize the commonalities between clauses with relative pronouns to the left and right of C. In this section, I offer an account of relative pronoun position that captures these similarities, along with two important differences. The first difference concerns whether the relative pronoun may show case attraction. The second concerns whether the relative pronoun forms a prosodic unit with the complementizer. I maintain that both differences, along with the similarities in structure and meaning, are best accounted for if the relative pronoun moves cyclically through two Ā-positions on the edge of the relative clause. The higher position is on the edge of CP; the lower position is on the edge of TP. Copies of the relative pronoun are syntactically present in both positions, and principles of chain spell-out determine which is submitted for interpretation at PF.

3.1 The Distribution of Ke

The route I want to take to these conclusions starts with the complementizer. Thus far, we have seen one major part of the distribution of *ke*: it occurs in a left-peripheral position in relative clauses. The other major place where *ke* appears is in interrogatives, where it surfaces with the *wh*-word to its immediate left. In this environment, *ke* is typically optional, as we see most directly in (26) and (27). Complementizer agreement is determined as in relative clauses.

(26) 'Isii-nm (ke-m) __ hi-wapayata-yo' pro_{obj}?
who-ERG (C-2) __ AGR-help-TAM PRO.2SG
'Who is going to help you?'

(27) Miniku haama (ke-m) Beth-nim hii-ca-qa pro_{obj} [$_{CP}$ __ hi-k'oomay-ca]?
which man.NOM (C-2) Beth-ERG AGR-tell-TAM PRO.2SG [__ AGR-be.sick-TAM]
'Which man did Beth tell you is sick?'

(28) 'Ituu ke-m-ex pro_{subj} 'inii-yo'qa pro_{obj} __?
what.NOM C-2-1 PRO.1SG give-TAM PRO.2SG __
'What could I give you?'

The presence of *ke* in questions and relative clauses immediately suggests a morphological connection to Ā-movement. The impression is bolstered by consideration of environments where *ke* is absent. It does not appear in nonrelative declarative clauses, for instance, whether matrix or embedded. These lack any overt exponent of C.

(29) (*Ke) Beth hi-neki-se [$_{CP}$ (*ke) Jill-nim pee-siw'e-nu' Matt-ne].
(*C) Beth.NOM AGR-think-TAM [(*C) Jill-ERG AGR-not.recognize-TAM Matt-ACC]
'Beth thinks Jill won't recognize Matt.'

Nor does *ke* appear in yes/no questions, which are introduced by the complementizer *weet.*

(30) Weet kii haama ha-anii-ya yoxˆ coqoycoqoy?
Y.N this.NOM man.NOM AGR-make-TAM that.NOM tepee.NOM
'Did this man make that tepee?'

(31) Weet-ex 'iin weyelkilit-ne 'a-capakayx-s?
Y.N-1 1SG.NOM wheel-ACC AGR-clean-TAM
'Have I cleaned the wheel?'

Let us suppose then that *ke* is a complementizer morphologically specified for Ā contexts. Such specialization is a famous property of Irish, of course. In Irish, the leniting complementizer *aL* appears in every embedded clause along the path of Ā-movement (McCloskey 1979 et seq.). Thus, C is marked the same way in Irish whether Ā-movement terminates in its specifier or merely moves through it cyclically on its way to a higher landing site.

(32) cuid den fhilíocht a chualaís ag do sheanmháthair á rá a
some of.the poetry aL heard [S2] by your grandmother being-said aL
cheap an sagart úd __
composed the priest DEM __
'some of the poetry that you heard your grandmother saying that that priest composed'
(McCloskey 2002:185)

McCloskey (2002) takes this pattern to show that the same featural manipulations take place in Spec,CP all along the path of Ā-movement. If movement to the highest Spec,CP is feature-driven, then movement to intermediate Spec,CPs must be feature-driven as well. In correspondence with the substantive [wh] feature found on the C phase head at the top of the Ā-chain, purely formal [wh] features occur on C phase heads lower down on the path of Ā-movement.[5]

These facts and this analysis underline both a similarity and a difference with the situation in Nez Perce. Nez Perce is like Irish in using a special complementizer at the top of an Ā-dependency, suggesting that the morphology of C in both languages is sensitive to the feature [wh]. Where the two languages differ is in the morphology of lower Cs along the extraction path. Unlike Irish *aL*, Nez Perce *ke* is possible only in the clausal periphery in which Ā-movement terminates. In interrogatives, it may appear directly after the *wh*-word on the left periphery, but it never appears in embedded clauses along the path of extraction. In relative clauses, similarly, *ke* appears in the highest CP, but does not occur in lower clauses.

(33) Kii hii-we-s 'iniit [$_{CP}$ yoxˆ **ke** Jack ha-ani-ya __].
this.NOM AGR-be-TAM house.NOM [RP.NOM C Jack.NOM AGR-make-TAM __]
'This is the house that Jack built.'

[5] This way of describing the two types of features follows Rizzi (2006).

(34) Kii hii-we-s 'iniit [$_{CP}$ yox̂ **ke** Jack hi-hi-ce
this.NOM AGR-be-TAM house.NOM [RP.NOM C Jack.NOM AGR-say-TAM
[$_{CP}$ __ **Ø/*kex** ['iin hani-ya __]].
[__ C [1SG.NOM make-TAM __]]
'This is the house that Jack says he built.'

The generalization is that *ke* appears in C only when a substantive [wh] feature is present. A merely formal [wh] feature is not enough.[6]

This generalization takes on a special significance when we return to pairs like (35) and (36), which vary the position of the complementizer and relative pronoun. We now understand why *ke* should appear in cases where the relative pronoun surfaces in Spec,CP (the (a) examples): C bears a substantive [wh] feature responsible for movement to this position. The presence of *ke* in the (b) examples is more curious and more telling.

(35) a. samx̂ **ko-nya** kex *pro*$_{subj}$ 'a-sayqi-ca __
shirt.NOM RP-ACC C PRO.1SG AGR-like-TAM __
'the shirt that I like'
b. samx̂ kex **ko-nya** *pro*$_{subj}$ 'a-sayqi-ca __
shirt.NOM C RP-ACC PRO.1SG AGR-like-TAM __
'the shirt that I like'

(36) a. picpic **yox̂** ke kine __ hi-pinmix-saqa
cat.NOM RP.NOM C here __ AGR-sleep-TAM
'the cat that was sleeping here'
b. picpic ke **yox̂** kiney __ hi-pinmix-saqa
cat.NOM C RP.NOM right.here __ AGR-sleep-TAM
'the cat that was sleeping right here'

The dilemma is this. In all of these examples, C has a morphological form indicative of a substantive [wh] feature. In the (b) examples, however, the piece that we would expect to surface in the specifier position appears lower down in the relative clause.

[6] Notably, while the Nez Perce pattern diverges from that of Irish, it matches quite closely the pattern in a diverse set of other languages. Chung (1998:chap. 6) shows the same pattern in Chamorro, for instance: C takes on special forms when Ā-movement terminates in its specifier, but mere cyclic movement through the specifier is not enough to trigger a special form of C. That suggests that the morphology of C is sensitive only to substantive [wh] features. (Interestingly enough, Chamorro is also morphologically sensitive to [wh] features on its verbs themselves, and here the Irish-type pattern is found: all [wh] features, formal or substantive, trigger the *wh*-form of the verb. See Chung 1998.) In Hausa, where [wh] features affect the morphology of an inflectional, auxiliary-like head, the pattern emerges once again. The *wh*-form appears in the clause where Ā-movement terminates, but not in lower clauses along the path of extraction (Green and Reintges 2001). Several further instances of this type of pattern are discussed by Georgi (2014). Across these additional cases, I contend that morphological markings are sensitive not just to the [wh] feature *tout court*, but to the status of that feature as substantive rather than purely formal.

3.2 Syntactic and PF Analyses

Two natural responses to this dilemma should be considered.

The first makes use of ideas developed by Chomsky (2008) concerning the relationship between C, the phase head, and its complement, TP.[7] Chomsky proposes that various of the features of T are not inherent in that category, but rather are inherited from C; this, he suggests, is how T comes to possess unvalued ϕ-features. Suppose the features subject to inheritance included [wh] features. If C simply transferred its [wh] feature to T, cyclic movement would pass through the TP edge instead of the CP edge. This in turn would suggest that inheritance of [wh] would be tantamount to inheritance of phasal status from C by T. The alternation in relative pronoun position follows, on this view, if inheritance of the substantive [wh] feature may be merely optional. When C retains its [wh] feature, it attracts the relative operator, resulting in the order relative pronoun – complementizer. When the feature is transferred to T, the relative operator moves to its specifier instead, resulting in the order complementizer – relative pronoun. In both cases, the Ā dependency terminates at the highest phase edge internal to the relative clause, as is standard.[8]

(37) $[_{CP}$ RP ‖ $C_{[wh_{subst}]}$ $[_{TP}$ T . . . ~~RP~~ . . .]]

Phase edge

Inheritance

(38) $[_{CP}$ C $[_{TP}$ RP ‖ $T_{[wh_{subst}]}$ . . . ~~RP~~ . . .]]

Phase edge

Because variation in the syntax of inheritance is the key piece of this analysis for understanding the alternation in (35) and (36), I call this the *syntactic approach* to relative pronoun position.

One consequence of the syntactic approach is that the appearance of *ke* in structures like (38) must be taken to reflect the association of the substantive [wh] feature with C *prior* to inheritance. Note that, because the [wh] feature in question is substantive, it is not possible for T to inherit it while C also retains a copy—a scenario in which presumably T and C would both act as phase heads. To satisfy the substantive [wh] feature on T, Ā-movement would have to terminate in the specifier of that head, problematically leaving the substantive [wh] feature on the higher phase head unchecked. The result is that *ke*, on the syntactic approach, can be seen only as a somewhat imprecise guide to the ultimate syntactic location of substantive [wh]. Its appearance is compatible with substantive [wh] either on C itself, or on the head of its TP complement.

[7] I set aside for the moment the possibility that the traditional C category corresponds to a range of heads, as in Rizzi 1997, returning to this question in section 4.

[8] For simplicity, I depict the relative operator here and throughout this section as merely a relative pronoun. These representations can be modified to reflect a head-raising or matching approach, as discussed in section 5.1, with the addition of a copy of the head NP serving as the complement to each instance of RP.

This result could be avoided under slightly modified assumptions. Suppose, for instance, that the C-T relationship results in T bearing a purely formal [wh] feature, rather than a substantive one.[9] The substantive feature may therefore be retained by C. The outcome is a structure in which movement must proceed cyclically through the edge of TP, where it satisfies formal [wh], on its way to the edge of CP, where it satisfies substantive [wh].

(39) $[_{CP}$ RP $\|$ $C_{[wh_{subst}]}$ $[_{TP}$ RP $\|$ $T_{[wh_{formal}]}$ . . . ~~RP~~ . . .]]

Phase edge *Phase edge*

This structure in turn paves the way for a second type of response to the dilemma we are facing: the optionality lies not in how features are distributed, but in how the overall Ā-chain is pronounced. In other terms, it resides not in the narrow syntax, but in interpretation at the PF interface. I therefore call this the *PF approach* to relative pronoun position. PF interpretation of the highest copy results in relative pronoun – complementizer order. PF interpretation of the intermediate copy at the TP edge results in complementizer – relative pronoun order. Independent of what may happen at the interface, Ā-movement in the syntax uniformly terminates in Spec,CP. This provides an explanation for why *ke* uniformly appears in relative clauses that does not retreat from the hypothesis that *ke* marks substantive [wh] features on C.

Seen in this way, the Nez Perce facts present a clear similarity to a pattern of *wh*-agreement in Coptic, which has been discussed by Chris Reintges and colleagues in a series of papers (Green and Reintges 2001, Reintges, LeSourd, and Chung 2006, Reintges 2007). In Coptic, as in Nez Perce, C takes a special form in environments where we expect Ā-movement to terminate in its specifier.[10] This is the so-called relative form of C. What is special about the relative form of C is that it cooccurs with a pattern of *wh*-in-situ in interrogatives: the *wh*-word surfaces not in Spec,CP, as expected, but in its base position. In the following examples, the matrix C (boldfaced) takes the relative form, whereas the *wh*-word remains embedded in a lower clause:

(40) *Coptic*

a. **ere** əm-mɛɛše čɔ əmmo-s [če ang nim]
REL(-PRES) DEF.PL-crowd say PREP-3SG.F [C I who]
'Who is the crowd saying that I am?'

b. **ənt**-a-tetən-ei eβol e-t-erɛmos [e-nau e-u]
REL-PERF-2PL-come PCL to-DEF.SG.F-desert [to-see.INF at-what]
'What have you come out of the desert to see?'
(Reintges 2007:270)

[9] There is, to my mind, an open question about whether such a relationship should be considered inheritance, or merely a standard case of a head selecting for particular features on the head of its complement.

[10] Speaking simply of C here is a bit of a simplification, abstracting away from various factors that support a more articulated C system in Coptic.

Here again is a tension between the analysis of morphology on C, which plausibly involves substantive [wh] features of the sort found in Ā-movement, and the position of the item expected to undergo that Ā-movement. Reintges, LeSourd, and Chung (2006) and Reintges (2007) resolve the tension by proposing a PF approach for Ā-movement in Coptic. Ā-movement does indeed take place in the syntax in examples like (40a–b); the *wh*-word nevertheless surfaces in situ because PF interpretation singles out a lower copy for pronunciation.

Now, there is an empirical argument to be made for the PF approach to the Nez Perce puzzle, which brings us to the first difference correlated with relative pronoun position. One important way the syntactic and PF approaches differ is in the phasal status of CP when the relative pronoun is pronounced at the edge of TP. On the PF approach, CP is always a phase, and the relative pronoun may be pronounced inside or outside this phase. On the syntactic approach, movement of the relative pronoun to CP correlates with the phasehood of CP. The relative pronoun always surfaces on the highest phase edge of the relative clause; it never surfaces inside the relative clause phase. The expectation on the syntactic approach therefore is that relative pronouns should always behave as though they belong to the matrix phase. On the PF approach, this is expected only for relative pronouns to the left of C, not those to the right.

The phenomenon that allows us to test these predictions is case attraction. We observed in section 2.3 that the case of the relative pronoun is standardly determined internal to the relative clause. Relativization of an object in (41a) produces an accusative relative pronoun; relativization of an intransitive subject in (41b) produces a nominative relative pronoun. In these examples, the case of the relative pronoun contrasts with the case of the head noun, determined external to the relative clause.

(41) a. Mine hii-we-s samx̂ **ko-nya** kex *pro*$_{subj}$ 'a-sayqi-ca __?
where AGR-be-TAM shirt.NOM RP-ACC C PRO.1SG AGR-like-TAM __
'Where is the shirt that I like?'

b. *Pro*$_{subj}$ 'e-suki-se 'aayato-na **yox̂** ke __ hi-pay-n.
PRO.1SG AGR-recognize-TAM woman-ACC RP.NOM C __ AGR-arrive-TAM
'I recognize the woman who just came in.'

Case attraction is a pattern whereby the relative pronoun takes on the case of the head noun, potentially departing from the case associated with the Ā gap. Examples (42a–b) show the case-attracted versions of (41): the accusative of (41a) is replaced by nominative, whereas the nominative of (41b) is replaced by accusative.

(42) a. Mine hii-we-s samx̂ **yox̂** kex *pro*$_{subj}$ 'a-sayqi-ca __?
where AGR-be-TAM shirt.NOM RP.NOM C PRO.1SG AGR-like-TAM __
'Where is the shirt that I like?'

b. *Pro*$_{subj}$ 'e-suki-se 'aayato-na **ko-nya** ke __ hi-pay-n.
PRO.1SG AGR-recognize-TAM woman-ACC RP-ACC C __ AGR-arrive-TAM
'I recognize the woman who just came in.'

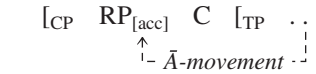
Case attraction in a number of extinct Indo-European languages is discussed by Bianchi (2000b), who makes the important observation that attraction is subject to locality effects. As Harbert

(1982) points out, when a preposition is pied-piped by the relative pronoun in Classical Greek, case attraction becomes impossible.[11]

(43) *Classical Greek*
eidénai tẽn dúnamin (toútōn) [$_{CP}$ [$_{PP}$ eph' hous / *hōn]$_1$
to.discover the strength those.GEN.PL [[against RP.PL.ACC / *RP.PL.GEN]
án íōsin __$_1$]
they.are.to.proceed __]
'to discover the strength of those against whom they are to proceed'

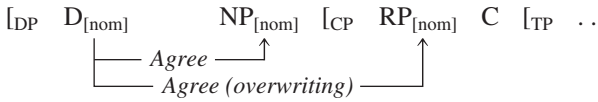
Bianchi interprets this fact as evidence that case attraction depends on local government of the relative pronoun by the matrix D. My proposal, which is very much in the same spirit, is that case attraction follows from Agree in the DP containing the relative clause. Agreement between the matrix D and the relative pronoun may overwrite the latter's case, resulting in the case attraction pattern. The derivation of (42a) may be schematized as follows:

(44) a. *Movement of the case-marked relative pronoun to the CP edge*



b. *Construction of the matrix DP*
[$_{DP}$ D$_{[nom]}$ NP$_{[–]}$ [$_{CP}$ RP$_{[acc]}$ C [$_{TP}$ . . .

c. *Agreement and case overwriting within DP*



In Nez Perce, agreement as in (44c) is like other instances of case concord in that it is optional for elements other than the most local N within D's complement. An adjective, for instance, may but need not carry the case of the noun it modifies. (For clarity, I have included the silent D in the following glosses.)

(45) a. 'E-'pewi-tx [$_{DP}$ Ø yoosyoos wix̂silikeecet'es-ne]!
AGR-look.for-IMP [D.ACC blue chair-ACC]
'Look for the blue chair!'
b. *Pro*$_{subj}$ 'e-'pewi-se [$_{DP}$ Ø yoosyoos-na wix̂silikeecet'es-ne].
PRO.1SG AGR-look.for-TAM [D.ACC blue-ACC chair-ACC]
'I am looking for the blue chair.'

(45b) is like the case attraction examples (42a–b) in that case is spread from D to an element other than the most local N. (45a) is like examples (41a–b) in that this fails to happen.

[11] The observation is ultimately due to Smyth (1920:568), who provides example (43) with the parenthesized matrix demonstrative, as cited here. The passage without the demonstrative appears in Xenophon's *Anabasis*, 5.1.8.

With this background, we can proceed to use case attraction as a test for the presence of a phase boundary between the matrix D and the relative pronoun at the edge of TP.[12] The case attraction examples in (42) featured relative pronouns to the left of C. Crucially, the case pattern of these examples is not well-formed with relative pronouns to the right of C. Relative pronouns in the lower position may only show the case determined internal to the relative clause. These facts complement (43) in demonstrating locality in case attraction.

(46) a. Mine hii-we-s samx̂ kex {***yox̂*** **/ ko-nya**} *pro*$_{subj}$ 'a-sayqi-ca __?
where AGR-be-TAM shirt.NOM C {*RP.NOM / RP-ACC} PRO.1SG AGR-like-TAM __
'Where is the shirt that I like?'

b. *Pro*$_{subj}$ 'e-suki-se 'aayato-na ke {***ko-nya / yox̂***} __
PRO.1SG AGR-recognize-TAM woman-ACC C {*RP-ACC / RP.NOM} __
hi-pay-n.
AGR-arrive-TAM
'I recognize the woman who just came in.'

The interaction between case and position for relative pronouns is summarized in (47).

(47) *Interaction between case and position for relative pronouns*

Relative pronoun case	RP position	
	Spec, CP	Spec, TP
CP-internal case (non-attraction)	Y (e.g., (18)–(20), (41))	Y (e.g., (35b), (36b))
CP-external case (case attraction)	Y (e.g., (42))	N (e.g., *(46))

The correlation between relative pronoun position and the possibility of case attraction is as predicted on the PF approach. Only relative pronouns to the left of C are external to the relative clause phase and thus accessible for agreement with the matrix D. Relative pronouns to the right of C are internal to the relative clause phase and not accessible for case attraction.

3.3 Explaining Optionality at the PF Interface

Suppose we now adopt the PF approach to relative pronoun position, as in (39). The major question we must face is why it should be possible for the PF interface to show flexibility in the pronunciation of the Ā-chain.

[12] The local nature of case attraction opens up similar diagnostic possibilities for adpositions, of course, as we see in the Greek example (43). However, it remains an open question at present whether Nez Perce makes use of a P category. Notably, the grammatical tradition on the language (e.g., Aoki 1979, 1994, Rude 1985, 1999) does not recognize such a category, instead classifying the translation equivalents of common adpositions either as nouns, verbs, or case inflections.

An important clue can be found elsewhere in the grammar of Nez Perce. Seen through the lens of the PF approach, the alternation in relative pronoun position turns out to be closely parallel to a pattern of overt and covert movement for object possessors, discussed in Deal 2013a. The two positions for object possessors are seen in (48). One position is inside the object DP, where possessors surface in the genitive case, (48a). The other position is outside DP, in the vP spine, where possessors are marked with accusative case, (48b). The two examples are semantically equivalent.

(48) a. A.-nim ⟨T.-na⟩ paa-'yax̂-na'ny-a **T.-nm taaqmaał**.
A.-ERG ⟨T.-ACC⟩ AGR-find-μ-TAM T.-GEN hat.NOM
'A. found T.'s hat.'
b. A.-nim **T.-na** paa-'yax̂-na'ny-a ⟨T.-nm⟩ **taaqmaał**.
A.-ERG T.-ACC AGR-find-μ-TAM ⟨T.-GEN⟩ hat.NOM
'A. found T.'s hat.'

Part of the evidence for phonologically invisible possessor movement in examples like (48a) involves Condition C effects (Deal 2013a:417–418). But interestingly, part of it also involves a morphological signal that movement is taking place. Both versions of (48) contain the affix *na'ny*, argued in Deal 2013a to spell out a functional head μ.[13] This head merges below vP and attracts the object's possessor to its specifier. The vP structure for both versions of (48) is as in (49).

(49) $[_{vP}$ A. v $[_{\mu P}$ T. μ $[_{VP}$ find $[_{DP}$ T. hat]]]]

As in relative clauses, the result of movement in this structure may be interpreted at PF in either of two ways, resulting in overt and covert movement.

One distinctive aspect of the possessor-raising alternation is the correlation between the placement of the possessor phrase and its morphological case. In Deal 2013a, the presence of the accusative case in (48b) is handled in the normal way: an accusative case feature is assigned in syntax to the possessor chain. The top copy of this chain is realized, and the accusative feature is faithfully realized at PF. In examples like (48a), by contrast, an additional mechanism comes into the mix. Although the possessor chain is still syntactically associated with an accusative case feature, a PF rule kicks in to overwrite the case value of the copy of the possessor that remains in Spec,DP. The overwriting rule, explored in detail in Deal 2013a, is as in (50).

(50) For any case value α,
[Case:α] → [Case:Gen]/$[_{DP}$ DP:[__] $[_{DP}$ . . .]]
(Deal 2013a:412)

I want to now suggest that the existence of a rule like (50) is related to the fact that a lower copy is even eligible for pronunciation in (48).

[13] The rather complex morphophonology of this head is discussed by Deal and Wolf (to appear).

Typically, Nez Perce behaves like a language that requires highest copies to be pronounced. It insists on overt *wh*-movement in interrogatives, for instance. Similarly, inverse scope patterns are not freely available (Deal 2011). Both facts suggest that the copy pronunciation algorithm for this language obeys a familiar principle.

(51) Pronounce highest copy! (PHC)

In just the familiar way, regular obedience to this principle is a boon to the learner, who is able to use the surface position of elements as a guide to their semantic scope. In the case of possessors, however, obedience to PHC diminishes the body of evidence showing the effects of a language-particular morphological rule, (50). Such rules vary widely from language to language, and learners presumably require substantial evidence to acquire them. Perhaps the pressure to produce such evidence underlies a competing type of principle, which in this case favors the pronunciation of the lower copy.

(52) Apply morphological rules overtly! (AMRO)

Any grammar must choose between these principles in cases where they conflict, assuming that economy conditions rule out pronunciation of multiple members of a chain. What then can account for variation of the type we see in possessor raising, which holds internal to the idiolects of particular speakers? A plausible assumption is that individual speakers have access to multiple coexisting grammars, as argued both for adults and for children by Yang (2000, 2004). On Yang's model, speakers draw probabilistically from a set of grammars in the course of language use. The alternation in the overtness of possessor raising could be seen, through this lens, as resulting from the coexistence of a grammar strictly obeying PHC with a grammar obeying AMRO in cases of conflict. In both grammars, in the absence of a morphological rule, the highest copy will be pronounced. When a morphological rule applies, the grammars diverge, producing variation.

This approach predicts that variation in the overtness of movement will come about in any environment in which a morphological rule applies to a nontopmost copy. This in turn brings us to the second of our two differences between high and low relative pronouns, which is morphophonological. When a relative pronoun appears to the right of *ke*, but not when it appears to the left, the relative pronoun and the complementizer form a prosodic unit.

There are two types of evidence for the prosodic unit in question. First, for speakers showing vowel harmony, the complementizer and the low relative pronoun form a harmony domain. As described by Aoki (1966), harmony in Nez Perce contrasts a dominant set of vowels, /a o/, with a recessive set, /e u/.[14] A recessive vowel changes to the corresponding dominant vowel when a dominant vowel is present elsewhere in the domain. When a relative pronoun containing a strong vowel (/a/ or /o/) appears to the right of the complementizer, the recessive vowel of *ke*

[14] There is an extensive literature on this pattern, its historical development, and its theoretical consequences: for example, Chomsky and Halle 1968:377–379, Jacobsen 1968, Rigsby and Silverstein 1969, Zwicky 1971, Hall and Hall 1977, Mackenzie and Dresher 2004.

harmonizes, producing *ka*. The following examples, drawn from corpora, reflect the grammar of a speaker retaining the vowel harmony pattern:

(53) *Pro*$_{subj}$ hipe-quyim-ne texŝsem **ka kona** *pro*$_{subj}$ hi-tkuliik-cine __.
PRO.3PL AGR-climb-TAM ridge.NOM C RP.LOC PRO.3PL AGR-hunt-TAM __
'They went up the ridge where they had been hunting.'
(Aoki and Walker 1989:552)

(54) Kaa pee-Ø-ne yoq'op-nim cuułim-nim 'iceyeeye-ne **ka ko-nya** teewis *pro*$_{subj}$
then AGR-tell-TAM DEM-ERG bull-ERG coyote-ACC C RP-ACC horn.NOM PRO.3SG
paa-wi-hany-a __, ''Pii-wapayata-m'ee!''
AGR-DIST-make-TAM __ AGR-help-TAM
'Then that bull said to the coyote for whom he had made horns, ''Now you help me!'''
(Aoki and Walker 1989:480)

This pattern of vowel harmony is not attested when the relative pronoun precedes the complementizer, suggesting that in that case the two do not form a prosodic unit.

Current speakers of Nez Perce do not have productive vowel harmony (Crook 1999). They do, however, retain a pattern that provides a second type of evidence for prosodic grouping: stress. For these speakers, pronouns to the right of C share a stress domain with the complementizer, in contrast to those to the left of C. Stress falls on the first syllable of the complementizer when the relative pronoun precedes, as in (55). When the relative pronoun follows, as in (56), stress falls on the relative pronoun; the first syllable of the complementizer is not stressed.

(55) cíckan yóx̂ ké-m-ex *pro*$_{subj}$ 'iníi-ye *pro*$_{obj}$ __
blanket.NOM RP.NOM C-2-1 PRO.1SG give-TAM PRO.2SG __
'the blanket that I gave to you'

(56) ke-m-ex káa *pro*$_{subj}$ cew'cew'-téetu *pro*$_{obj}$ __
C-2-1 RP.TIME PRO.1SG call-TAM PRO.2SG __
'when I call you'

Both stress and vowel harmony (for those speakers who have it) are at the word level in Nez Perce. The harmony and stress facts follow straightforwardly if, in the morphological component, a merger rule applies to relative pronouns at the edge of TP, bringing the complementizer and relative pronoun together into a prosodic word. In this way, merger feeds stress assignment (for all speakers) and harmony (for those speakers who retain the harmony pattern). (57) records a hypothesis about the form of the merger rule.

(57) $[C\ [_{TP}[_{DP}\ RP \rightarrow [C + RP\ [_{TP}[_{DP}$

(57) could be considered a rule of local dislocation in Embick and Noyer's (2001) terms. The precise form of the rule, however, is not so crucial as its mere existence. Its existence explains why AMRO should apply in the case of relative pronouns: when the highest copy is pronounced, that bleeds the overt application of a rule like (57). That in turn explains why copies of relative pronouns in Spec,TP should be eligible for pronunciation, even though these copies are not the topmost members of their respective chains.

4 CP, TP, and *That*-Trace Effects

The result of the previous section is that relative pronouns surface in two Ā-positions in the Nez Perce relative clause: Spec,CP and an Ā specifier of TP. The arguments leading there have taken for granted the relatively traditional phrase structure employed in Chomsky 2008, according to which a single CP projection sits above the TP layer. It is fitting now to consider the way the facts might look through the lens of the articulated CP system proposed by Rizzi (1997). In this system, the CP layer is—in at least some syntactic environments—made up of a series of projections,[15] the highest of which, Force, is the phase head (Rizzi 2005).

(58) $[_{\text{ForceP}}$ Force $[_{\text{TopP}}$ Top(ic) $[_{\text{FocP}}$ Foc(us) $[_{\text{FinP}}$ Fin $[_{\text{TP}}$ T . . .

The possibility of an expanded CP structure raises a question about the lower position of relative pronouns. On the one hand, it remains possible within this type of model that the lower position is indeed on the TP edge. The analysis of the previous section could be revised as in (59), for instance, where the CP phase has been replaced by the ForceP phase. This has the consequence that the relationship between the higher phase head and the lower one is less local, a point I return to below.

(59) $[_{\text{ForceP}}$ RP ‖ $\text{Force}_{[\text{wh}_{\text{subst}}]}$ $[_{\text{TopP}}$ Top $[_{\text{FocP}}$ Foc $[_{\text{FinP}}$ Fin $[_{\text{TP}}$ RP ‖ $\text{T}_{[\text{wh}_{\text{formal}}]}$ . . . ~~RP~~ . . .

Phase edge *Phase edge*

On the other hand, the expansion of CP makes available a number of lower specifier positions in the CP domain that could in principle act as phases and thus serve as an alternative lower landing site for relative operator movement.[16] To tell apart these possibilities, we must investigate the connection between relativization and the TP layer in particular.

One key aspect of this connection concerns subjects. It should be mentioned right away that research on Nez Perce has not yet established that subjects in this language move to the TP projection, or otherwise interact with T.[17] If, however, the Nez Perce facts are indicative of a larger pattern in the derivation of externally headed relatives, we can expect to find relevant clues in subject behavior in languages where the connection between subjects and TP is much more secure. One such language is English, of course. I want now to show how an old problem in

[15] This series is oftentimes even more articulated than shown in (58); for instance, Rizzi (1997) argues in addition for a topic position to the right of Focus. Note, however, that Rizzi explicitly does *not* propose that the entire expanded CP sequence is present in every syntactic environment. This proves relevant for the discussion of English *that*-trace effects in this section.

[16] See Bianchi 1999 and Zwart 2000 for proposals in which relative pronouns occupy the nontopmost layer in a split CP.

[17] Two strands of research are relevant here. One concerns subject agreement, standardly taken to indicate an Agree relation between the subject and T. In Deal 2010b, I observe that morphological facts suggest instead that subject agreement features are borne by the Aspect head in Nez Perce. The choice of aspect determines the way that subject agreement is expressed on the verb (whether as a prefix or as a suffix), whereas tense has no such effect. The other strand concerns A-scrambling, often taken to arise when the object moves to TP instead of the subject (Mahajan 1990). In Deal 2013b, I argue that, while Nez Perce does have A-scrambling, objects scramble over subjects at the level of vP, not TP. This leaves open the question of whether T enters into an Agree relation with the subject.

English *that*-trace effects finds its solution in light of the claim that it is indeed TP that constitutes the lower phase in relative clauses. The English facts support, in particular, the following version of that claim (leaving open for the moment how the term *relative C* is to be understood in an expanded CP model):

(60) *Lower Phase Conjecture* (LPC) (to be revisited)
The TP sister of relative C is a phase.

I return to some consequences and a possible refinement of the LPC at the end of this section.

The basics of the English *that*-trace effect were observed by Perlmutter (1971). Both in long questions and in long relative clauses, the overt complementizer *that* is forbidden in a CP from which the subject has been extracted.

(61) a. Who did he say (*that) __ bought the rutabaga?
b. the woman who he said (*that) __ bought the rutabaga

An important exception occurs at the very top of relative clauses, as Bresnan (1972:chap. 3) quickly observed. When the subject is extracted from the TP sister of relative C, *that* is not only possible, but indeed obligatory when the relative pronoun is null.

(62) a. the woman that __ bought the rutabaga
b. Machines *(that) __ add have been used for thousands of years.

The matter was much discussed for almost a decade (see Chomsky and Lasnik 1977, Kayne 1980, 1981, Chomsky 1981:245–246, Pesetsky 1982) before theoretical attentions shifted away, leaving Bresnan's observations unexplained. Returning to the pattern now in the light of the Nez Perce facts, a new type of explanation for those observations becomes possible. The analysis builds on the work of Pesetsky and Torrego (2001), who situate the basic *that*-trace facts of (61) within phase theory. It turns out that an extension of their analysis to (62) follows immediately as soon as their theory is paired with the LPC.

We should first review the mechanisms that Pesetsky and Torrego use in addressing the core paradigm in (61). Their approach arises at the intersection of four proposals, the first of which concerns the relationship between subjects and T. Subjects agree with T and share their ϕ-features with it. They also receive features from T in return, and these features are typically known as ''nominative case.'' But what is nominative case? The feature appears only on DPs, and furthermore only on those that have agreed with T. It is, to another way of looking, the feature [T] on DP—and that is the hypothesis that Pesetsky and Torrego propose.

Like the nominative case feature it replaces, [T] on DP is uninterpretable; it must be deleted before LF. The second proposal concerns the mechanics of this deletion. While the checking of the [T] feature on the subject happens in Spec,TP, the deletion of the checked feature is postponed until the completion of the entire phase. Note that Pesetsky and Torrego couch their analysis in a traditional phrase structure in which the CP domain is not expanded, as in the previous section. Suppose we understand this structure as resulting from the lexical expression of Force and Finiteness in a single head in English, as Rizzi (1997) proposes; this single head C also serves as the

phase head. By contrast to CP, TP in an ordinary declarative or interrogative clause is not a phase. That means that deletion of checked [T] on the subject only takes place once the entire CP has been built.

The third and fourth proposals concern the nature of English finite C. Consider the featural makeup of C in an embedded clause from which a *wh*-phrase is extracted. In order to attract the *wh*-phrase, C must have a [wh] feature. Pesetsky and Torrego propose that English C quite generally contains a [T] feature as well (their third proposal). When a subject *wh*-phrase is extracted from CP, then, both [wh] and [T] on C can be satisfied by a single instance of movement: movement of the subject to Spec,CP.

(63) $[_{CP}$ who$_{[T,wh]}$ C$_{[T,wh]}$ $[_{TP}$ ~~who~~ T $[_{VP}$ bought the rutabaga]]]

Note that the [T] feature on the subject has already itself been checked at the TP level. It is not yet deleted, however, which enables it to further satisfy the [T] feature on C within the same phase.

There is a different calculus in play in object questions. To satisfy [wh] on C, the object *wh*-phrase must move to Spec,CP. To satisfy its [T] feature, C attracts T itself. Pesetsky and Torrego's fourth proposal is that, in embedded clauses, the morphological result of this movement is *that*.[18]

(64) $[_{CP}$ what$_{[wh]}$ $[_{T}$ that$]_i$+C$_{[T,wh]}$ $[_{TP}$ Mary$_{[T]}$ ~~T~~$_i$ $[_{VP}$ bought ~~what~~]]]

Two separate movements must occur in this case, since there is not a single element that C can attract that bears both [T] and [wh].

These proposals pave the way for Pesetsky and Torrego's analysis of the core *that*-trace facts, which traces them back to a simple matter of economy. Consider the examples in (61) once again.

(61) a. Who did he say (*that) __ bought the rutabaga?
b. the woman who he said (*that) __ bought the rutabaga

To rule out the illicit instances of *that*, the lower clause must be required to have derivation (65a) rather than (65b).

(65) a. $[_{CP}$ who$_{[T,wh]}$ C$_{[T,wh]}$ $[_{TP}$ ~~who~~ T $[_{VP}$ bought the rutabaga]]]

b. *$[_{CP}$ who$_{[T,wh]}$ $[_{T}$ that$]_i$+C$_{[T,wh]}$ $[_{TP}$ ~~who~~ ~~T~~$_i$ $[_{VP}$ bought the rutabaga]]]

[18] The optionality of *that* in various cases is discussed in Pesetsky and Torrego 2001:sec. 4. It is not clear that the mechanism for optional *that* proposed there remains available on the present approach; regrettably, I must leave this interesting matter for future work.

It is clear why this preference should hold: this is a straightforward case of economy in movement. In (65a), the [T] and [wh] features on C are satisfied with only one instance of movement: subject movement to Spec,CP. That blocks the more complex derivation in (65b), where two movements are involved: phrasal movement for [wh], and head movement for [T].

Now, what of the special behavior of *that* and a subject gap at the very top of a relative clause? (Pesetsky and Torrego leave this as an open puzzle.) Let us return to the relative clause data we saw in (62).

(62) a. the woman that __ bought the rutabaga
b. Machines *(that) __ add have been used for thousands of years.

Consider the point in the derivation of (62a) when only the TP of the relative clause has been constructed. [T] on the subject is checked in Spec,TP.[19]

(66) a. $[_{TP}\ [_{DP}\ Op]_{[T,wh]}\ T\ [_{VP}$ bought the rutabaga]]

The next step is merger of relative C. Once TP is merged with this head, it forms a phase—so the LPC tells us. In Pesetsky and Torrego's system, this has the immediate effect that checked uninterpretable features within TP are deleted. This means that [T] on the subject is no longer present for syntactic computation.

b. $[\text{Rel-C}_{[T,wh]}\ [_{TP}\ [_{DP}\ Op]_{[wh]}\ T\ VP]]$

With the subject's [T] feature deleted, there is only one way the derivation can continue, in view of the [T] and [wh] features on C. The subject must move to Spec,CP to check the feature [wh]. This now has the effect that [T] on C is left unsatisfied. C is forced to satisfy its [T] feature by attracting the T head, resulting in *that*.

c. $[_{CP}\ [_{DP}\ Op]_{[wh]}\ [_{T}\ \text{that}]_i + \text{Rel-C}_{[T,wh]}\ [_{TP}\ \cancel{Op}\ \cancel{T}_i\ VP]]$

Since there is no way of satisfying C's needs with fewer instances of movement, this derivation is not ruled out by the economy constraints that damned the parallel interrogative derivation, (65b). The presence of a lower phase in relative clauses has the effect of ruling out the option of satisfying C via a single instance of subject movement.

What we have from this study of *that*-trace phenomena is then a confirmation not only for the LPC as a particular claim about locality domains, but also for broader aspects of the theory of phases. Cyclicity, on this theory, is tightly connected to the groupings of syntactic material that are delivered to the LF interface. Together, Nez Perce and English relative clauses show us this connection: Nez Perce shows us that relative DPs move cyclically through the edge of the topmost TP in relative clauses, and English shows us that the topmost TP in relative clauses

[19] Op here may be understood as containing the head NP, as discussed in section 5.1; see footnote 8.

is a domain in which checked uninterpretable features are fully deleted, in preparation for LF interpretation. At the same time, the special role of subjects in particular in the English *that*-trace pattern provides evidence that it is indeed TP, as the LPC records, that serves as the lower phase in relative clauses.

I suspect the English facts are not exceptional in this regard. While many languages do not show *that*-trace effects (a fact that might be explained by simply treating their complementizers as the realization of a C head, rather than a C-T complex), a number of languages show other types of special behavior for the highest subject position in relative clauses. In languages using resumptive pronouns in relative clauses, for instance, resumptives are typically impossible in the highest subject position, as McCloskey (1990) has observed.[20] This type of pattern is shown in (67) for Palestinian Arabic, drawing from work by Shlonsky (1992, 2002). Relativization of the highest subject in this language requires a gap and does not tolerate a resumptive pronoun, (67a). Relativization of all other arguments shows the opposite pattern: a resumptive pronoun is required and a gap is ruled out.

(67) a. l-bint ʔilli (*hiy) raayḥa ʕal beet
the-girl that (*she) going to house
'the girl that is going home'

b. l-bint ʔilli šufti-*(ha)
the-girl that (you.F) saw-*(her)
'the girl that you saw'

c. l-bint ʔilli fakkarti ʔinno *(hiy) raayḥa ʕal beet
the-girl that (you.F) thought that *(she) going to house
'the girl that you thought is going home'

d. l-bint ʔilli fakkarti ʔinno Mona ḥabbat-*(ha)
the-girl that (you.F) thought that Mona loved-*(her)
'the girl that you thought that Mona loved'
(Shlonsky 1992:445, 446)

Shlonsky's proposal is that resumptive pronouns appear as a last resort, when movement is blocked. The blocking effect is derived in his system by treating the Spec,CP position in Palestinian Arabic as an A-position, with the consequence that movement of an object to Spec,CP incurs a Relativized Minimality violation. In the present system, the impossibility of movement for all but the highest subject can immediately be made to follow from phase theory if formal [wh] features cannot be present at the TP level in Palestinian Arabic. If the highest TP constitutes a phase in relative clauses, but only the highest subject can obtain a position on the edge of this TP, then only the highest subject will be able to move to CP and leave behind a gap in the relative clause. Spec,CP remains strictly an Ā-position.

[20] Indeed, Demirdache (1997) observes a close connection between the so-called Highest Subject Restriction in resumption and the *that*-trace effect.

These patterns come with a number of theoretical implications. One immediate consequence of both the English and the Palestinian Arabic facts concerns the effects of syntactic context on the phasehood of TP. In order to derive the specialness of *that*-trace obviation at the very top of relative clauses, the phasal status of TP in relatives must not extend to questions or to ordinary embedded clauses.[21] The subject's [T] feature remains present and able to satisfy requirements of C in such environments precisely because TP does not constitute a phase. Likewise, while resumption in Palestinian Arabic is required for relativization of all but the highest subject, this pattern does not extend to questions. In a question, both subjects and objects may be moved, leaving behind a gap in argument position (Shlonsky 2002).

(68) Miin l-ʔasad ʔakal __ mbarriḥ?
who the-lion ate __ yesterday
'Who did the lion eat yesterday?'
(Shlonsky 2002:138)

(69) Miin __ ḥall l-muškile?
who __ solved the-problem
'Who solved the problem?'
(Shlonsky 2002:142)

The absence of a highest-subject effect in this environment is explained if TP constitutes a phase in Palestinian Arabic only in proximity to relative C. The overall conclusion is that it must be possible for a certain projection type to constitute a phase in one syntactic environment but not in another—a conclusion also reached, though by different means, by Den Dikken (2007), Gallego (2007), and Bošković (2014). That means that the theory of locality domains cannot be restricted to the simple enumeration of a set of cyclic categories, as Chomsky (2000, 2001) had suggested.

An additional consequence is that we can remain relatively neutral on the question of an expanded CP layer, as far as the cyclic movement of relative operators is concerned. Cyclic movement through the TP edge may be represented either with a traditional CP, as in (39), or with an expanded one, as in (59). The choice between these representations merits further discussion primarily as concerns the proper statement of the LPC, especially with reference to an expanded CP model.

Given that relative pronouns move to Force in such a model (Rizzi 1997), the label *relative C* could naturally be understood as referring to the Force head. Force, however, is projected at a considerable structural distance from T. Quite substantial countercyclicity is thus involved if TP becomes a phase only when Force is merged. The solution may lie in the presence of relative-clause-related features lower in the C domain, which must be checked against related features on the Force head. This immediately makes for a connection with Authier's (2013) work on polarity features both on Force and on Fin, the latter checked against the former. In a parallel

[21] The present view is thus distinguished both from the standard view of phasal categories (e.g., Chomsky 2008), according to which TP is never a phase, and from views according to which TP is always a phase. On the latter proposal, see Assmann et al. 2015 and references there.

way, we might thus posit a relative Fin head bearing a feature to be checked against the Force head that attracts relative pronouns. The LPC can be restated accordingly.

(70) *Lower Phase Conjecture* (LPC) (restated)
The TP sister of relative C/Fin is a phase.

The position of relative Fin vis-à-vis TP in the expanded CP model is the same as the position of C vis-à-vis TP in the traditional CP model. Only very limited countercyclicity is then required in the determination of the phasehood of TP. Phasehood for TP is determined at the point of merger with a head—alternatively, relative C (the term I will use for the remainder of this article) or relative Fin.

5 The Question of NP-Movement

So far, we have been concerned primarily with the internal structure of the relative CP. We now turn to the question of how the CP relates syntactically to the head NP in the matrix clause. The way this NP comes to be CP-external is a major dividing point among analyses of relative clauses. In this section, I review these analyses and the ways that patterns of morphological case do and do not decide among them. Then, in the next section, I show how case facts from Nez Perce provide a new argument that relative clauses across languages may, but need not, be derived by NP-movement. Many Nez Perce relative clauses—though crucially, not all—are structurally ambiguous between raising and nonraising analyses.

5.1 Approaches to the External Head

What I will call the ''classical'' view of relative clause structure takes the head NP to originate outside the relative CP, in the position in which it ultimately surfaces. CP-internally, the relative operator consists simply of the relative pronoun.[22] This is shown in (71) for the DP *the proposal which we support*, modifying the standard classical view to include TP-level cyclicity.

(71) $[_{DP}$ the $[_{NP}[_{NP}$ proposal$]$ $[_{CP}$ which C $[_{TP}$ ~~which~~ $[_{TP}$ we T [support ~~which~~]]]]]]

A prominent variant of this view is the ''matching'' approach characteristic of early generative work (see Stockwell, Schachter, and Partee 1973:chap. 7, Vergnaud 1974:chap. 1), more recently updated and defended by Sauerland (1998, 2000, 2002; see also Hulsey and Sauerland 2006). While the matching approach takes the head NP to originate outside the relative clause, it also posits an identical NP inside the relative clause, sister to the relative pronoun. The CP-internal NP is deleted under identity with the CP-external NP.

(72) $[_{DP}$ the $[_{NP}[_{NP}$ proposal$]$ $[_{CP}$ which ~~proposal~~ C $[_{TP}$ ~~which proposal~~ . . .]]]] (*Matching*)

[22] See De Vries 2002 for discussion of the history of this view, and references in De Vries 2013.

Because these approaches both treat the head NP as originating outside the relative CP, they both predict the absence of syntactic connectivity effects between the head and the CP-internal gap.

The expectation is different on raising approaches. Like the matching approach, raising approaches treat the relative pronoun as a determiner taking an NP complement. Instead of remaining in situ in DP, however, this NP moves to the left of the relative pronoun, where it is pronounced as the relative clause head. Varieties of the raising approach differ as to the precise landing site for NP-movement (see Vergnaud 1974, Kayne 1994, Bianchi 2000a, Bhatt 2002, De Vries 2002, for several possibilities). In (73), I follow Bhatt (2002) in taking the NP to move to the specifier of a nominal functional projection.[23]

(73) [$_{DP}$ the [$_{nP}$[$_{NP}$ proposal] n [$_{CP}$ which ~~proposal~~ C [$_{TP}$ ~~which proposal~~ . . .]]]]

NP-movement

Because the head NP originates inside the relative clause, the signature prediction of the raising approach is syntactic connectivity between the head and the relative-clause-internal gap.

What sort of evidence of syntactic connectivity could tell these approaches apart? The effects that have been most discussed in the literature involve patterns of connectivity holding at the syntax-semantics interface: idiomatic interpretation, binding, and scope (Schachter 1973, Vergnaud 1974, Åfarli 1994, Alexiadou et al. 2000, Bianchi 2000a, Bhatt 2002, De Vries 2002, Hulsey and Sauerland 2006, Donati and Cecchetto 2011). The best argument from binding in English, for instance, is based on cases like (74a–b), where a pronoun in the head NP is interpreted as bound by a quantifier internal to the relative clause.[24]

[23] This choice is motivated by two kinds of considerations. One is the pattern of relative clause coordination seen in examples like (i) (compare the parallel Nez Perce structure (5)), which is most straightforwardly accounted for if the head NP does not form a surface constituent with the relative pronoun (Bianchi 2000a, Bhatt 2002; cf. Kayne 1994).

(i) the proposal [which you outlined __] and [which I support __]

The other is that moving elements at least typically do not project (though cf., e.g., Vergnaud 1974, Bhatt 1999, Georgi and Müller 2010, Donati and Cecchetto 2011). A nominal head distinct from the moving NP is thus required above CP to anchor the nominal functional sequence, explaining why nominals modified by relative clauses are like other nominals in their possibilities for adjectives, possessors, and numerals. (Note that not all such elements may be taken to originate inside the relative clause and move with NP, as discussed by Bhatt (2002) and Heycock (2005).) See Alexiadou et al. 2000 and Bhatt 2002 for discussion of further possibilities for the landing site for NP-movement.

[24] Also much discussed in the literature is binding as in (i), where Condition A of the binding theory is involved.

(i) The [$_{NP}$ portrait of himself$_i$] [$_{CP}$ that John$_i$ painted __] is extremely flattering.
(Schachter 1973:32)

As both Bhatt (2002) and De Vries (2002) point out, this argument is called into question by the fact that picture-DPs constitute an environment for exempt anaphora (in the terms of Pollard and Sag 1992) / logophoricity (in the terms of Reinhart and Reuland 1993); English reflexives readily function as exempt anaphors / logophors. De Vries (2002:80–81) argues that similar reanalysis is not available for certain Condition A examples in Dutch, making the Dutch argument potentially stronger evidence for head raising than the English one. Note, however, that semantic reconstruction of the type discussed in the text is possible for reflexive elements just as it is for ordinary bound pronouns, reproducing the challenge to examples like (74). (On syntactic and semantic approaches to reconstruction for Condition A, see Fox and Nissenbaum 2004.) Note also that reflexive possessives are not reliably licensed in relative clause heads in Swedish (Platzack 2000), suggesting crosslinguistic variation either in the possibility of a raising analysis or in the nature of reconstruction for Condition A.

(74) a. The [$_{NP}$ picture of his$_i$ mother] [$_{CP}$ that every soldier$_i$ kept __ wrapped in a sock] was not of much use to him.
(Bhatt 2002:52)
b. The [$_{NP}$ period of his$_i$ life] [$_{CP}$ about which nobody$_i$ speaks __] is adolescence.
(Alexiadou et al. 2000:9)

On the raising analysis, the proper interpretation of the bound pronoun is ensured by syntactic reconstruction of the head NP to the gap position, or LF interpretation of the copy in this position. The foremost challenge to this argument comes from the literature on *semantic* reconstruction. If, as Sharvit (1999) shows, the gap in the relative clause is simply assigned a suitably high semantic type, the interpretation of examples like (74a–b) may be handled without syntactic reconstruction and without NP-raising.

This type of challenge can be circumvented most readily by investigation of connectivity of a purely morphosyntactic type. Connectivity in morphological case in particular is promising, given its role in supporting movement analyses of sluicing and pseudocleft constructions (Ross 1969, Merchant 2001, Den Dikken 2006). We will see shortly that the rich case system of Nez Perce proves useful in this respect.[25]

5.2 The Form of an Argument from Case

To arrive at the argument from case, we should first consider the ways that different types of case patterns bear on the raising analysis. It is relatively clear how we should interpret the presence of case connectivity, that is, a case form for the head noun that could only be determined internal to the relative clause: this provides evidence for NP-raising. Matters are less straightforward for the *absence* of case connectivity, which happens to be the much more commonly attested pattern. Of key concern are examples like Nez Perce (75) and (76), alongside their crosslinguistic counterparts.[26] In these examples, different cases are assigned CP-internally, to the gap, and CP-externally, to the matrix DP; the head noun must surface in the case assigned to the matrix DP. In (75), the CP-internal case is ergative, and the CP-external case is accusative. The head must surface in the accusative. In (76), the CP-internal case is accusative, and the CP-external case is nominative. The head must surface in the nominative.

(75) *Pro*$_{subj}$ 'e-cepeqick-e {picpic-ne / *picpic-nim} [$_{CP}$ ko-nim kex __ hii-pe-e'ny-e
PRO.1SG AGR-catch-TAM {cat-ACC / *cat-ERG } [RP-ERG C __ AGR-eat-μ-TAM
pro$_{obj}$ cuu'yem].
PRO.1SG fish.NOM]
'I caught the cat that ate my fish.'

[25] Indeed, case patterns in the language prove useful both as evidence bearing on head raising in grammar in general and as the primary, if not only, evidence on raising available internal to Nez Perce itself. Arguments from idioms, binding, and scope cannot be reproduced in the language: it does not seem to possess verb-object idioms, to allow NP complements for picture nouns, or to possess superlative or scopal adjectives of the type investigated by Bhatt (2002). (See, in this connection, Alexiadou et al. 2000 and Heycock 2005 for critical discussion of idiom and adjective facts as evidence for head raising in other languages.) It furthermore does not possess anaphors subject to Condition A, discussed in footnote 24.

[26] See, for instance, Smyth 1920 for Classical Greek, Borsley 1997 for Russian and Polish, Alexiadou et al. 2000 and De Vries 2002 for German, and Vogel 2002 for Icelandic.

(76) Mine hii-we-s {samx̂ / *samax̂-na} [$_{CP}$ ko-nya kex *pro*$_{subj}$
where AGR-be-TAM {shirt.NOM / *shirt-ACC} [RP-ACC C PRO.1SG
'a-sayqi-ca __]?
AGR-like-TAM __]
'Where is the shirt that I like?'

Borsley (1997) contends that this type of pattern undermines the support for the raising analysis, since a syntactic metric of connectivity notably fails to show a connection between the NP head and the CP-internal gap.[27] Proponents of the raising analysis have disputed this conclusion. Bianchi (2000a) suggests that case connectivity is absent not because NPs do not raise, but because case features for nouns arise only in the morphological component. In the syntax, case features are assigned only to Ds. The morphological case of the NP is calculated once its movement is complete, on the basis of the syntactic environment in which it finds itself at PF. This means that the NP is bound to surface in the case of the higher D, determined external to the relative clause. For De Vries (2002), the solution lies instead in the mechanics of syntactic feature checking between the head N and various Ds. The head N must agree with the relative determiner (i.e., the relative pronoun) in ϕ-features, and it must check its case feature against a matching case feature on a D head. The matching case feature does not have to be found on the relative determiner, however. As a result of NP-movement, the head noun comes to be in a local configuration with the matrix D; this provides the requisite syntactic context for checking of its case.

Bianchi's and De Vries's approaches have in common the idea that anticonnectivity as in (75)/(76) arises because NP receives or checks its morphological case relatively late in the derivation. That, not the absence of NP-movement, is why the case of the relative determiner need not match the case of the head noun. An additional implementation of this idea should also be explored, in view of the analysis of case attraction in section 3.2. In case attraction, too, we find anticonnectivity in case; here it is the relative pronoun that fails to show connectivity with the gap. To handle that pattern, its optionality, and its interaction with relative pronoun position, I proposed that the relative pronoun is assigned a case feature internal to the relative clause, in the syntax, but that this case feature may be overwritten once the relative operator obtains a position in which a new case is assigned under Agree. Suppose such an approach is extended to the head NP. The derivation of an example like (75) would look in part as in (77).

(77) a. *Raising of NP out of the relative CP*
$[_{nP}\ NP_{[erg]}\ n\ [_{CP}[_{DP}\ RP_{[erg]}\ NP_{[erg]}]\ C\ [_{TP}\ \ldots$
↑----- *NP-raising* -----!

b. *Merger of the external D*
$[_{DP}\ D_{[acc]}\ [_{nP}\ NP_{[erg]}\ n\ [_{CP}[_{DP}\ RP_{[erg]}\ NP_{[erg]}]\ C\ [_{TP}\ \ldots$

c. *Agreement and case overwriting within DP*
$[_{DP}\ D_{[acc]}\ [_{nP}\ NP_{[acc]}\ n\ [_{CP}\ [_{DP}\ RP_{[erg]}\ NP_{[erg]}]\ C\ [_{TP}\ \ldots$
Overwriting

[27] Similar arguments are advanced by Platzack (2000).

Like the Agree operation responsible for case attraction, the operation in (77c) represents a type of DP-internal concord, spreading the features of D to material within its complement. Like for relative pronouns, the case feature of an NP is retained on lower copies, and so Agree of this type does not result in an unrecoverable deletion. Unlike for relative pronouns, Agree in this instance cannot, in view of (75)/(76), be taken to be optional. This is presumably a consequence of the general fact that feature sharing is obligatory between D and the most local N of its complement, though not in Nez Perce between D and other material contained in its complement.

I take the upshot of this analysis, like that of Bianchi's (2000a) and De Vries's (2002) analyses, to be as follows. A language in which there is no case connectivity in relative clauses is a language in which no argument can be mounted for or against the raising analysis on the basis of case patterns. The absence of connectivity is compatible both with a nonraising derivation and with raising plus obligatory overwriting. Only in a language where overwriting is not fully obligatory will it be possible to mount a case-based argument for or against raising. We will now see that Nez Perce is such a language.

6 NP-Raising and Its Absence: Evidence from Left-Dislocation

6.1 Connectivity and Left-Dislocation

The environment in Nez Perce that does not show an obligatory overwriting effect is a variety of left-dislocation. When the head NP and its relative clause appear to the left of the matrix, followed by a clear prosodic break, the head may show a case that could only be determined internal to the relative clause. We see this pattern in (78a); compare the ill-formed in-situ version (78b).

(78) a. [$_{DP}$ Picpic-nim [$_{CP}$ ko-nim kex __ hii-pe-e'ny-e *pro*$_{obj}$ cuu'yem]]$_1$,
[cat-ERG [RP-ERG C __ AGR-eat-μ-TAM PRO.1SG fish.NOM]
pro$_{subj}$ 'e-cepeqick-e *pro*$_1$.
PRO.1SG AGR-catch-TAM PRO.3SG
'The cat that ate my fish, I caught it.'

b. **Pro*$_{subj}$ 'e-cepeqick-e [$_{DP}$ picpic-nim [$_{CP}$ ko-nim kex __ hii-pe-e'ny-e
PRO.1SG AGR-catch-TAM [cat-ERG [RP-ERG C __ AGR-eat-μ-TAM
pro$_{obj}$ cuu'yem]].
PRO.1SG fish.NOM]]
'I caught the cat that ate my fish.'

I have glossed (78a) as featuring an ordinary DP in the left periphery, coindexed with a matrix pronominal. If this analysis is on the right track, this example demonstrates case connectivity in the externally headed relative clause structure, exactly as predicted to be possible in the absence of overwriting on the raising analysis. I return momentarily to why it should be that overwriting is not present in this structure. We must first consider the evidence that examples like (78a), despite their special case pattern, do indeed instantiate the same relative clause structure we have seen thus far in this article.

For the purposes of this discussion, I will refer to structures like (78a) by the neutral descriptive term *left-dislocation*. A first thing to note about left-dislocation is that it coexists with a range

of patterns generally possible in Nez Perce relative clauses. In a relative clause within a dislocated DP, the relative pronoun may appear on either side of the complementizer, for instance.

(79) [$_{DP}$ Samaxˆ-na [$_{CP}$ {ko-nya kex / kex ko-nya} *pro*$_{subj}$ 'a-sayqi-ca __]]$_1$, mine
[shirt-ACC [{RP-ACC C / C RP-ACC} PRO.1SG AGR-like-TAM __]] where
pro$_1$ hii-we-s?
PRO.3SG AGR-be-TAM
'The shirt that I like, where is it?'

Multiple relative clauses may be stacked on a single head in left-dislocation, just as they may in situ.

(80) [$_{DP}$ 'Aayato-nm [$_{CP}$ kem ko-nim __ hi-cewcewi-ne *pro*$_{obj}$] [$_{CP}$ kem ko-nim __
[woman-ERG [C RP-ERG __ AGR-call-TAM PRO.2SG] [C RP-ERG __
hi-wapayatay-o' *pro*$_{obj}$]]$_1$, manaa *pro*$_1$ hi-we'niki-se?
AGR-help-TAM PRO.2SG]] how PRO.3SG AGR-be.called-TAM
'The woman who called you who is going to help you, what is her name?'

(81) [$_{DP}$ Picpic-ne [$_{CP}$ ko-nya kex *pro*$_{subj}$ 'e-kiwyek-e __] [$_{CP}$ ko-nya kex *pro*$_{subj}$
[cat-ACC [RP-ACC C PRO.1SG AGR-feed-TAM __] [RP-ACC C PRO.1SG
'a-sayqi-ca __]]$_1$, 'isii-nm 'u-u-s *pro*$_1$?
AGR-like-TAM __]] who-GEN AGR-be-TAM PRO.3SG
'The cat that I fed that I like, whose is it?'

Relative clauses may also be coordinated in the familiar way.

(82) [$_{DP}$ Picpic-ne [$_{CP}$ [$_{CP}$ ko-nya kex *pro*$_{subj}$ 'e-kiwyek-e __] kaa [$_{CP}$ ko-nya kex
[cat-ACC [[RP-ACC C PRO.1SG AGR-feed-TAM __] and [RP-ACC C
pro$_{subj}$ 'a-sayqi-ca __]]]$_1$, 'isii-nm 'u-u-s *pro*$_1$?
PRO.1SG AGR-like-TAM __]]] who-GEN AGR-be-TAM PRO.3SG
'The cat that I fed and that I like, whose is it?'

And elements of nominal functional structure, such as demonstratives, may appear to the left of the head noun.

(83) [$_{DP}$ Ki-nm ciq'aamqal-nim [$_{CP}$ ko-nim kex __ hi-wahoo-caqa *pro*$_{obj}$]]$_1$,
[this-ERG dog-ERG [RP-ERG C __ AGR-howl.at-TAM PRO.1SG]]
'isii-nm 'u-u-s *pro*$_1$?
who-GEN AGR-be-TAM PRO.3SG
'This dog that was howling at me, whose is it?'

(84) [$_{DP}$ Ki-nye cepeepy'uxˆtis-ne [$_{CP}$ ko-nya kenm *pro*$_{subj}$ 'epe-ep-u' __]]$_1$,
[this-ACC pie-ACC [RP-ACC C PRO.1PL.INCL AGR-eat-TAM __]]
'isii-nm 'u-u-s haani-t *pro*$_1$?
who-GEN AGR-be-TAM make-PART PRO.3SG
'This pie that we are going to eat, who made it?'

All this is to be expected if left-dislocation structures indeed feature DP constituents in the left periphery. Notably, certain of these facts serve to clarify that the Nez Perce left-dislocation

construction is not, alternatively, a species of correlative structure, in which a clausal rather than nominal constituent appears on the left edge (Srivastav 1991, Dayal 1996). In contrast to headed relative clauses, correlatives do not allow stacking (Grosu and Landman 1998, McCawley 2004); (80) and (81) thus speak in favor of a headed-relative analysis. Correlatives also systematically lack nominal functional structure above the CP level (Keenan 1985), in contrast to the pattern in (83) and (84). An additional important difference concerns requirements placed on the main clause. Correlatives require the presence of a demonstrative or null pronoun in the main clause and do not tolerate substitution of an indefinite expression, such as a numeral (Dayal 1996: 160–161). No such requirement is in place in Nez Perce. The main clause in (78a) and (79)–(84) contains a null pronoun, and either a demonstrative or a numeral may be used instead. We see the range of possibilities in (85).

(85) [$_{DP}$ Ha-'ayato-nm [$_{CP}$ ko-nma-m kem __ hipo-opayatay-o'qa *pro*$_{obj}$]]$_1$,
[PL-woman-ERG [RP-PL-ERG C __ AGR-help-TAM PRO.2SG]]
waaq'o lepu'$_1$ / *pro*$_1$ / yox̂-me$_1$ kine hi-w-siix.
already two.NOM / PRO.3PL / DEM.NOM-PL here AGR-be-TAM
Lit. 'Women who can help you, two/they/those are already here.'

In the version of (85) that contains a numeral in the matrix, the most colloquial translation of the preposed phrase uses an indefinite: 'Concerning women who can help you, two are already here'. Such a reading is not allowed, crosslinguistically, for correlative structures (Grosu and Landman 1998, Lipták 2009).

Now, the question of matrix clause contents points to a second way the present analysis of left-dislocation can be justified, and the Nez Perce facts situated in a typology of dislocation across languages. In all of the examples above, the dislocated DP is coindexed with an element internal to the matrix TP. Crosslinguistically, dislocation constructions split into those that show connectivity between the dislocated phrase and a TP-internal element, and those that do not. Constructions of the former type include contrastive left-dislocation (CLD) in Germanic and clitic left-dislocation (CLLD) in Romance, Semitic, and Greek; those of the latter type include hanging-topic left-dislocation (HTLD) across a range of European languages. This difference is typically captured by treating CLD and CLLD, but not HTLD, as derived by movement. (See Van Riemsdijk 1997, Alexiadou 2006, and references there.)

There are two main types of phenomena that can be used in Nez Perce to assess the possibility of movement of the peripheral DP. The first uses locality constraints. (86) shows that the left-dislocated DP may be coindexed with an element inside a matrix relative clause island. (Recall that (11) confirms the island status of Nez Perce relative clauses.)

(86) [$_{DP}$ Cepeepy'ux̂tis-ne [$_{CP}$ kex ko-nya *pro*$_{subj}$ 'e-hip-e __]]$_1$, *pro*$_{subj}$
[pie-ACC [C RP-ACC PRO.1SG AGR-eat-TAM __]] PRO.1SG
'e-cukwe-ce haama-na ke ko-nim$_2$ __$_2$ paa-ny-a *pro*$_1$.
AGR-know-TAM man-ACC C RP-ERG __ AGR-make-TAM PRO.3SG
'The pie I ate, I know the man who made it.'

Similarly, (87) shows coindexation of the dislocated DP with the subject of a clausal adjunct; compare (10b), showing the impossibility of relativization from the corresponding position.

(87) [$_{DP}$ Ciq'aamqal-nim [$_{CP}$ ko-nim kex __ hi-wahoo-caqa *pro*$_{obj}$]]$_1$, *pro*$_{subj}$
[dog-ERG [RP-ERG C __ AGR-howl.at-TAM PRO.1SG]] PRO.1SG
'ays-no'qa c'alawi *pro*$_1$ hi-tqasaw-no'qa.
be.happy-TAM if PRO.3SG AGR-go.silent-TAM
'The dog that was howling at me, I'd be happy if he'd be quiet.'

Such facts are parallel to findings on HTLD in European languages (Ross 1967:sec. 6.2.1, Van Riemsdijk and Zwarts 1997 [1974], Alexiadou 2006:673–674), and strongly suggestive of a derivation that does not involve movement of the dislocated DP from within the matrix TP.

The second diagnostic features case marking. In languages like German and modern Greek, HTLD constructions allow the left-dislocated DP to appear in the nominative even when the corresponding TP-internal element is nonnominative (Van Riemsdijk 1997, Alexiadou 2006). To see this effect most clearly in Nez Perce, we should examine examples where the dislocated DP contains no relative clause. This is so in (88), which retains the locality properties of its counterpart example (86). Even though the coindexed pronominal in the matrix clause is associated with accusative case, the initial DP appears in the nominative.[28]

(88) [$_{DP}$ Kii cepeepy'uxtin']$_1$, *pro*$_{subj}$ 'e-cukwe-ce haama-na ke ko-nim$_2$ __$_2$
[this.NOM pie.NOM] PRO.1SG AGR-know-TAM man-ACC C RP-ERG __
paa-ny-a *pro*$_1$.
AGR-make-TAM PRO.3SG
'This pie, I know the man who made it.'

The absence of case connectivity between the initial DP and the coindexed element of the matrix is again parallel to HTLD; it is again straightforwardly predicted if the initial DP originates in the left periphery, rather than moving there.

An immediate rejoinder to this argument arises in view of case overwriting. Couldn't it be that case overwriting, rather than the absence of movement, is why Nez Perce left-dislocation lacks connectivity in case? (88) makes it clear that this objection will not get very far. In order for overwriting to play a crucial role in a sentence like this one, the initial DP would need to originate within the matrix relative clause and receive a case there, and subsequently undergo movement to the initial position in violation of a relative clause island.

The base-generation analysis avoids this final consequence and, in so doing, effectively turns the question of case overwriting on its head. It suggests that DPs may be merged in such a way as to be at no point in an argument position, where they might receive or check a case feature by standard pathways. Their licensing is apparently unconnected to the syntactic calculus of case. Plausibly, initial DPs as in (88) are generated simply without a syntactic case feature on D and

[28] The accusative status of the anaphoric *pro* in this example is indicated morphosyntactically by two patterns. First, the subject of its clause is ergative; ergative subjects in Nez Perce require accusative objects. Second, verbal agreement in its clause uses the prefix *paa* (harmonized from *pee*); this portmanteau prefix includes third person object agreement, and object agreement in Nez Perce requires an accusative object. On the connections between subject case, verb agreement, and object case, see Deal 2010b.

surface in the nominative as a morphological default, as Schütze (2001) suggests.[29] That leads to the immediate prediction that the D of a left-peripheral DP will not be able to overwrite the case of the most local NP of its complement, should that NP have obtained a case prior to NP-movement. Base-generated, clause-peripheral DPs constitute an environment where, effectively, case overwriting is called off.

This provides a straightforward explanation for why it should be that case connectivity crops up in relative clauses in exactly this type of syntactic circumstance. D does not overwrite NP's case under left-dislocation because D has no case feature to pass to NP.[30] D may still agree with its local NP in the familiar way, but given NP-movement, it is NP that has a case feature; we might imagine that this feature is instead shared upward, to D.

(89) a. *Merger of the external, caseless D (HTLD context)*
$[_{DP}\ D_{[-]}\ [_{NP}\ NP_{[erg]}\ [_{CP}[_{DP}\ RP_{[erg]}\ NP_{[erg]}]\ C\ [_{TP}\ \ldots$

b. *Agreement and case sharing within DP*
$[_{DP}\ D_{[erg]}\ [_{NP}\ NP_{[erg]}\ [_{CP}[_{DP}\ RP_{[erg]}\ NP_{[erg]}]\ C\ [_{TP}\ \ldots$
↑ ⌊

The upward passing of case is clear in examples like (83) and (84), repeated here, where a matrix demonstrative appears above the relative clause head.[31]

(83) [$_{DP}$ Ki-nm ciq'aamqal-nim [$_{CP}$ ko-nim kex __ hi-wahoo-caqa pro_{obj}]]$_1$,
[this-ERG dog-ERG [RP-ERG C __ AGR-howl.at-TAM PRO.1SG]]
'isii-nm 'u-u-s pro_1?
who-GEN AGR-be-TAM PRO.3SG
'This dog that was howling at me, whose is it?'

(84) [$_{DP}$ Ki-nye cepeepy'uxtis-ne [$_{CP}$ ko-nya kenm pro_{subj} 'epe-ep-u' __]]$_1$,
[this-ACC pie-ACC [RP-ACC C PRO.1PL.INCL AGR-eat-TAM__]]
'isii-nm 'u-u-s haani-t pro_1?
who-GEN AGR-be-TAM make-PART PRO.3SG
'This pie that we are going to eat, who made it?'

Such passing of features upward is ruled out in derivations like (77), where D has a case feature, presumably because case features cannot be deleted unrecoverably. Thus, D must pass its case feature to NP (whose case feature is preserved on lower copies), rather than vice versa.

[29] This does not imply that *all* nominative is a morphological default; see section 6.2 for a critical distinction between default and nondefault nominative concerning case attraction.

[30] I note this absence of a feature on D as [—], to indicate a gap in the overall set of N-related features (ϕ/Case) that D bears. Because D agrees with N in a variety of features, I assume that D-N agreement takes place regardless of whether there is such a gap.

[31] The demonstratives of these examples might be treated as D heads directly agreeing with the raising NP, or as elements of the matrix DP's functional spine, between D and nP. In the latter case, these examples instantiate concord of the type seen for adjectives in (45b). See Deal 2016 for evidence that demonstratives do indeed behave like adjectives in showing concord only optionally.

Let me now briefly summarize. At this point, we have taken several steps toward a morpho-syntactic argument for the raising analysis. We saw first that the absence of case connectivity for in-situ DPs may be reconciled with NP-movement given a mechanism for ensuring that the NP receives or checks its case relatively derivationally late. Case overwriting is one such mechanism, which draws independent support from relative pronoun case attraction. This leads to an expectation about syntactic contexts where the overwriting mechanism is called off: here, the case assigned internal to the relative clause should be able to surface on the NP head. What we have in Nez Perce left-dislocation structures—an instantiation of HTLD—is a confirmation for this approach. The D external to the relative clause receives no case feature that may be used to overwrite the case on NP. The CP-internal case may surface faithfully, therefore—and it may even spread beyond material originating inside the relative clause, passing its case feature up to material originating in the matrix DP.

6.2 Anticonnectivity and Left-Dislocation

These results leave two possible overall approaches to Nez Perce relatives still on the table. One is that all Nez Perce relatives have a structure like (73), manifesting head raising. The other is that some relatives have structure (73) while others have a structure like (71) or (72)—that is, NP-movement takes place in some relative clauses but not in others. This second possibility would match the conclusions of Åfarli (1994) on Norwegian, Szczegielniak (2006) on Polish and Russian, and Sauerland (1998), Bhatt (2002), and Hulsey and Sauerland (2006) on English. English stands out in this list of languages in that it does not morphologically mark the difference between relative clauses that are and are not derived by raising, for instance by a distinctive choice of relative complementizer or relative pronoun. Nez Perce behaves like English in this respect, as we will now see.

The argument for a nonraising analysis in Nez Perce relatives again comes from left-dislocation. Suppose, as above, that a DP originating in the left periphery lacks a case feature and is realized in the nominative as a morphological default. If the head of the relative clause originates external to the relative CP, it too is expected to lack a case feature and therefore surface in the nominative. This explains the second pattern of case possible under left-dislocation in Nez Perce, as examples like (90) illustrate.

(90) [$_{DP}$ Yox̂ ciq'aamqal [$_{CP}$ kex ko-nim __ hi-wahoo-tato *pro*$_{obj}$]]$_1$, *pro*$_{subj}$
[that.NOM dog.NOM [C RP-ERG __ AGR-howl.at-TAM PRO.1SG]] PRO.1SG
'ays-no'qa c'alawi *pro*$_1$ hi-tqasaw-no'qa.
be.happy-TAM if PRO.3SG AGR-go.silent-TAM
'That dog that howls at me, I'd be happy if he'd be quiet.'

This example is importantly parallel to (87) in the relationship between the peripheral DP and the coindexed element of the matrix; both sentences instantiate the same type of base-generated left-dislocation structure, namely, HTLD. The case difference for the head noun follows because

relative clauses may be derived in two ways. Case connectivity, as in (87), follows if the base-generated peripheral DP includes a relative clause constructed according to the raising analysis. An absence of connectivity, as in (90), follows if a nonraising derivation is used instead. On a classical analysis, for instance, (90) may be derived as follows:[32]

(91) a. *Merger of caseless NP and relative CP (HTLD context)*
$[_{NP}\ NP_{[-]}\ [_{CP}[_{DP}\ RP_{[erg]}]\ C\ [_{TP}\ \ldots$
b. *Merger of the external, caseless D*
$[_{DP}\ D_{[-]}\ [_{NP}\ NP_{[-]}\ [_{CP}[_{DP}\ RP_{[erg]}]\ C\ [_{TP}\ \ldots$

Both the external NP and the external D are without syntactic case features and must be realized in the nominative. This is parallel to left-dislocation of a DP not containing a relative clause, as in (92), or (88) above.

(92) $[_{DP}$ Yoxˆ himeeq'is wahoo-t'ipec ciq'aamqal$]_1$, pro_{subj} 'ays-no'qa c'alawi
[that.NOM big bark-FREQ dog.NOM] PRO.1SG be.happy-TAM if
pro_1 hi-tqasaw-no'qa.
PRO.3SG AGR-go.silent-TAM
'That big ever-barking dog, I'd be happy if he'd be quiet.'

This way of handling the morphological nominative of left-dislocation makes a crucial distinction between this instance of nominative and its counterpart on DPs within the TP. Unlike nominative subjects, which bear a syntactic nominative case feature, nominative DPs in left-dislocation bear no syntactic feature for any case. The two types of DPs end up with the same morphological form despite this important difference in their syntax.[33] The difference nevertheless matters when it comes to the question of case attraction for relative pronouns. In examples like (93), a syntactic nominative case feature is passed from the matrix D to the head noun as well as to the relative pronoun. (This example appears above as (42a); here I have included the silent D in the gloss.) The case of the relative pronoun, first determined in the relative clause, is thus overwritten as nominative from its original value as accusative.

(93) Mine hii-we-s $[_{DP}$ Ø samxˆ **yoxˆ** kex pro_{subj} 'a-sayqi-ca __]?
where AGR-be-TAM [D.NOM shirt.NOM RP.NOM C PRO.1SG AGR-like-TAM __]
'Where is the shirt that I like?'

The analysis we have followed predicts that, under left-dislocation, because there is no syntactic nominative feature on D, no parallel overwriting should be possible. There is simply no syntactic feature to overwrite with. The prediction is borne out. The examples in (94) are impossible; compare the well-formed versions in (95), where the relative pronoun retains its case.

[32] I leave open here the choice between a classical analysis and a matching analysis, exemplifying the former for the sake of simplicity. The reader can verify that a matching analysis can also derive the absence of case connectivity.

[33] The heart of the matter here is exactly the distinction between morphological and abstract case that plays an important role in work like Legate 2008.

(94) a. *[$_{DP}$ Yox̂ samx̂ [$_{CP}$ **yox̂** kex *pro*$_{subj}$ 'a-sayq-caqa __]]$_1$,
[that.NOM shirt.NOM [RP.NOM C PRO.1SG AGR-like-TAM __]]
mine *pro*$_1$ hii-we-s?
where PRO.3SG AGR-be-TAM
'That shirt that I liked, where is it?'

b. *[$_{DP}$ Picpic [$_{CP}$ **yox̂** kex __ hii-pe-e'ny-e *pro*$_{obj}$ cuu'yem]]$_1$,
[cat.NOM [RP.NOM C __ AGR-eat-μ-TAM PRO.1SG fish.NOM]]
pro$_{subj}$ 'e-cepeqick-e *pro*$_1$.
PRO.1SG AGR-catch-TAM PRO.3SG
'The cat that ate my fish, I caught it.'

(95) a. [$_{DP}$ Yox̂ samx̂ [$_{CP}$ **ko-nya** kex *pro*$_{subj}$ 'a-sayq-caqa __]]$_1$,
[that.NOM shirt.NOM [RP-ACC C PRO.1SG AGR-like-TAM __]]
mine *pro*$_1$ hii-we-s?
where PRO.3SG AGR-be-TAM
'That shirt that I liked, where is it?'

b. [$_{DP}$ Picpic [$_{CP}$ **ko-nim** kex __ hii-pe-e'ny-e *pro*$_{obj}$ cuu'yem]]$_1$,
[cat.NOM [RP-ERG C __ AGR-eat-μ-TAM PRO.1SG fish.NOM]]
pro$_{subj}$ 'e-cepeqick-e *pro*$_1$.
PRO.1SG AGR-catch-TAM PRO.3SG
'The cat that ate my fish, I caught it.'

This contrast confirms that the morphological nominative of left-dislocation has a different source than its counterpart in situ. The purely morphological status of nominative in left-dislocation is what underlies the utility of this construction in demonstrating both raising and nonraising derivations for Nez Perce relative clauses.

The investigation of case and left-dislocation thus leads us to conclude that head raising is a possible analysis of relative clauses, but it is not the only analysis available. Outside of left-dislocation, the two structural possibilities fail to produce any surface difference, resulting in structural ambiguity. Consider the triplets in (96) and (97): the (a) and (b) examples feature left-dislocation, showcasing, respectively, raising and nonraising derivations. The (c) examples feature in-situ DPs, for which the case on the head will be determined external to the relative clause regardless of whether NP-movement is operative.

(96) a. [$_{DP}$ Ko-nya samax̂-na [$_{CP}$ ko-nya kex *pro*$_{subj}$ 'a-sayqi-ca __]]$_1$,
[that-ACC shirt-ACC [RP-ACC C PRO.1SG AGR-like-TAM __]]
mine *pro*$_1$ hii-we-s?
where PRO.3SG AGR-be-TAM
'That shirt that I like, where is it?'

b. [$_{DP}$ Yox̂ samx̂ [$_{CP}$ ko-nya kex *pro*$_{subj}$ 'a-sayqi-ca __]]$_1$,
[that.NOM shirt.NOM [RP-ACC C PRO.1SG AGR-like-TAM __]]
mine *pro*$_1$ hii-we-s?
where PRO.3SG AGR-be-TAM
'That shirt that I like, where is it?'

c. Mine hii-we-s [$_{DP}$ samx̂ [$_{CP}$ ko-nya kex *pro*$_{subj}$ 'a-sayqi-ca __]]?
where AGR-be-TAM [shirt.NOM [RP-ACC C PRO.1SG AGR-like-TAM __]]
'Where is the shirt that I like?'

(97) a. [$_{DP}$ Picpic-nim [$_{CP}$ ko-nim kex __ hii-pe-e'ny-e *pro*$_{obj}$ cuu'yem]]$_1$, *pro*$_{subj}$
[cat-ERG [RP-ERG C __ AGR-eat-μ-TAM PRO.1SG fish.NOM]] PRO.1SG
'e-cepeqick-e *pro*$_1$.
AGR-catch-TAM PRO.3SG
'The cat that ate my fish, I caught it.'

b. [$_{DP}$ Picpic [$_{CP}$ ko-nim kex __ hii-pe-e'ny-e *pro*$_{obj}$ cuu'yem]]$_1$, *pro*$_{subj}$
[cat.NOM [RP-ERG C __ AGR-eat-μ-TAM PRO.1SG fish.NOM]] PRO.1SG
'e-cepeqick-e *pro*$_1$.
AGR-catch-TAM PRO.3SG
'The cat that ate my fish, I caught it.'

c. *Pro*$_{subj}$ 'e-cepeqick-e [$_{DP}$ picpic-ne [$_{CP}$ ko-nim kex __ hii-pe-e'ny-e *pro*$_{obj}$
PRO.1SG AGR-catch-TAM [cat-ACC [RP-ERG C __ AGR-eat-μ-TAM PRO.1SG
cuu'yem]].
fish.NOM]]
'I caught the cat that ate my fish.'

Case in the (c) examples may be determined either via case overwriting, on the raising analysis, or via normal mechanics of case assignment to NPs, on the nonraising alternative.

7 Conclusions

Two primary conclusions arise from this study. The first is that relative operator movement is more cyclic than previously conceived, passing not only through the edges of embedded CPs but also through the edge of the TP immediately subjacent to relative C. In Nez Perce, cyclicity of this type undergirds a PF analysis of relative pronoun position, which explains the syntactic and semantic unity of relative clauses alongside their differences in case attraction and prosodic phrasing. Cyclicity at the TP level raises a broader prospect for the theory of locality, which I have expressed as the LPC, repeated here.

(70) *Lower Phase Conjecture* (LPC)
The TP sister of relative C/Fin is a phase.

We expect in comparative syntax that the discovery of highly abstract properties of individual languages will point the way to broader mechanisms that are active in language more generally. We have seen, as expected, that the LPC proves instrumental in bringing under a unified explanation a series of apparently distinct observations about the top of relative clauses crosslinguistically. One of these concerns the *that*-trace effect in English; another concerns the highest-subject restriction in Palestinian Arabic.

The second conclusion is that NP-movement is possible, but not obligatory, in the formation of relative clauses. The head-raising analysis is possible alongside a nonraising alternative; many relative clauses are therefore structurally ambiguous. This conclusion has been reached already

by a number of authors working to investigate head raising through the lens of connectivity patterns holding at the syntax-semantics interface. The contribution of the Nez Perce facts to this literature is underlined by the use of a purely morphosyntactic diagnostic for connectivity. This diagnostic shows that it must indeed be the case, internal to the syntax, that NPs raise in some relative clauses but not in others. The variable types of interpretations that are possible for relative clause heads need not be handled exclusively through mechanisms internal to the semantic component (i.e., semantic reconstruction).

Overall, the implications of Nez Perce relative clauses flow from the way the language morphosyntactically reveals certain aspects of relative structure that are customarily concealed in more familiar languages. Comparative research is about leveraging the clear cases of a phenomenon to explain the less clear ones. I hope to have shown that Nez Perce has much to offer as a clear case in the formation of relative clauses.

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