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Preface to our 22nd volume

The University of Victoria was honoured to host the Workshop on Syntax of Relative Clauses on June 18-19, 2011. This was the seventh in an annual series of SSHRC-funded workshops featuring linguists from across Canada with a shared research interest in the grammatical structure and interpretation of noun phrases. The workshop featured ten invited talks (including those by Sara Johansson and Martina Wiltschko), as well as eleven talks and posters chosen from abstract submissions. In this volume, we are pleased to offer a selection of papers emerging from the workshop.

According to Keenan and Comrie (1977), all languages have some kind of relativization strategy. The papers in this volume present relativization phenomena from a wide variety of languages, particularly Indigenous languages of the Americas—including Blackfoot (Johansson), Thompson Salish (Koch), Okanagan (Lyon), and Omagua (Stark)—and Indo-European languages, including English (Duffield), Scottish Gaelic (Sheil), and Austro-Bavarian dialects of German (Wiltschko). Relative clauses also raise a variety of issues for syntactic theory. The papers in this volume centre on three main empirical issues:

I. What is the internal structure of relative clauses?
II. What is the nature of syntactic operations within relative clauses?
III. What is the external distribution of relative clauses?

The papers by Sara Johansson, John Lyon and Tammy Stark mainly address the first question; those by Karsten Koch, Christine Sheil and Jill Duffield, the second; and the paper by Martina Wiltschko, the third.

I am grateful to the authors for their contributions, and to the WPLC Editorial Team for their work on this volume, especially Supervisory Editor Matt Richards and undergraduate assistant Andrew McKishnie. My thanks also go to SSHRC for the Aid to Research Workshops and Conferences in Canada grant (#646-2010-1012) that allowed us to invite so many memorable presenters, and attract more—as well as to the invited speakers themselves, to my fellow conference organizers Leslie Saxon and Andrea Wilhelm, and especially to student organizer Jennifer Lancaster, for their assistance in obtaining the grant and organizing the workshop. Innumerable members of UVic's Linguistics Department helped with chairing sessions, registration, and many other tasks. As a newcomer to the department, I am particularly grateful for the generous contributions of time, energy and intellect from so many new colleagues and students. This volume is a testament to the lively scholarly dialogue that their efforts made possible.

Martha McGinnis
Organizing Committee Chair
Workshop on the Syntax of Relative Clauses

Reference

Keenan, Edward L. and Bernard Comrie. 1977. Noun phrase accessibility and Universal Grammar. *Linguistic Inquiry* 8:1, 63–99.

Editorial committee

Relative clauses, or clause-sized nominalizations? A consideration of Blackfoot

Sara Johansson
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In this paper I argue that Blackfoot (Algonquian) relative clauses are not nominalizations. I show that relative clauses are not agent nominalizations based on their morphology and the availability of non-agentive relative clauses. I show that relative clauses are not nominalized clauses based on the impossibility of possession and adjectival modification. After situating Blackfoot relative clauses in the Noun Phrase Accessibility Hierarchy (Keenan & Comrie 1977), I present a preliminary proposal that Blackfoot relative clauses are full CPs. I hypothesize that these constructions have a nominal super-structure that always contains a (possibly null) N projection, because they are always countable.

1 Introduction

In Blackfoot, a Plains Algonquian language spoken in Alberta and Montana, the verbal complex in a relative clause realizes both verbal and nominal functional categories. Consider the following example, in which the imperfective verbal stem *áyo'kaa* 'to sleep' bears the nominal inflectional suffix *-iksi* (1).

(1)

Om	**-iksi**	á-	yo'kaa	**-iksi**
DEM	**-AN.PL**	IMPF-	sleep	**-AN.PL**

'Those sleeping ones.'[1] (Frantz 2009:114)

1 Abbreviations used in this paper: 1 – first person; 3 – third person; 3S – third person singular agreement; 3PL – third person plural agreement; 4S – fourth (minor third) person agreement; AN.SG – animate singular; AN.PL – animate plural; BEN – benefactive; DEM – demonstrative; DIR – direct; FUT – future; IMPER – imperative; IMPF – imperfective (Dunham 2007); IN.SG – inanimate singular; IN.PL – inanimate plural; INT – intensifier; INTR – intransitive; INVS – invisible; MOD – modal; NEG – negation; NMZ – nominalizer; OBV.SG – obviative singular; PERF – perfective; PL – plural agreement; POSS – possessive; PRO – pronoun; PROX.SG – proximate singular; THM – theme.

Frantz (2009) analyzes this type of construction as a nominalization; that is, the verbal stem is reclassified and the resulting nominal bears the predicted nominal inflection. Relative clauses are constructed using this type of nominalization.

Based on the morphological composition of relative clauses, non-agentive constructions, and the unavailability of both possessive constructions and adjectival modification, I propose that this analysis does not hold for relative clauses. While there are deverbal nouns in Blackfoot, I argue that relative clauses are *not* deverbal, but are full CPs with a nominal super-structure. I propose that the nominal super-structure is the source of the nominal inflection on the verbal stem, which I consider to be due to concord.

1.1 Outline of this paper

This paper is organized as follows. In §2 I present evidence that Blackfoot relative clauses are not nominalizations. In §3 I consider Blackfoot relative clauses in light of the Noun Phrase Accessibility Hierarchy (Keenan & Comrie 1977). In §4 I develop a preliminary proposal that Blackfoot relative clauses are full CPs, and in §5 I consider the structural nature of these constructions. I conclude in §6.

2 Blackfoot relative clauses are not nominalizations

In this section I argue that Blackfoot relative clauses are not nominalizations. I begin with a background consideration of Blackfoot roots, which are not category-neutral (Armoskaite 2010). I return to Blackfoot relative clauses in the subsequent sections, first by demonstrating that they are not agent nominalizations (§2.2). I then present evidence that relative clauses are not nominalized clauses (§2.3).

2.1 Blackfoot roots are not category-neutral

Armoskaite (2010) shows that Blackfoot roots bear categorial information (nominal and verbal) . The following example is instructive: note that nominal roots are incompatible with transitivity suffixes, and verbal roots are incompatible with plural suffixes. Armoskaite demonstrates that this pattern holds across a large number of roots.

(2) NOMINAL ROOT *KSÁÁHKO* 'LAND'

a. PLURALIZATION

Ksááhko	**-istsi**
√land	**-IN.PL**
'Lands'	(Frantz & Russell 1995:118)

b. TRANSITIVITY SUFFIX

* Oma	á-	ipott	-aa	-ø	ksááhko	**-aa**
DET	IMPF-	fly	-INTR	-NMZ	√land	**-INTR**
Intended: 'The airplane landed.'						(Armoskaite 2010:29)

(3) VERBAL ROOT *OTTAK* 'GIVE A DRINK'

a. PLURALIZATION

* Ottak	**-iksi**
√give.a.drink	**-AN.PL**
Intended: 'Bartenders'	(Armoskaite 2010:30)

b. TRANSITIVITY SUFFIX

Áak-	ottak	**-i**	-wa
FUT-	√give.a.drink	**-INTR**	-3S
'He will serve drinks.'			(Frantz & Russell 1995:145)

Thus we see that nominal *phi*-feature morphemes such as animate plural *-iksi* cannot select verbal elements (3a) (see also Frantz 2009, Johansson 2007). While deverbal nouns do exist in Blackfoot, they exhibit different syntactic behaviour than relative clauses, which I argue are not deverbal stems.

In addition, there is no evidence of derivational nominalizing morphology in a Blackfoot relative clause.[2] Compare this with the overt morphology in the following event nominalization[3] of the verb 'to bake' (Grimshaw 1990) (4).

(4) EVENT NOMINALIZATION

Nit-	ihkiitaa	**-n**	-istsi
1	bake	**-NMZ**	-IN.PL
'My baked goods.'			(Frantz 2009:116)

However, it is important to recognize that null nominalizations of *verbal stems*, i.e. verbal roots that bear transitivity suffixes, appear to be possible in

2 Compare Yine (Arawakan), in which the primary relative clause strategy is overt nominalization of a clause, with different morphology indicating the relativization of different grammatical roles (Hanson, in prep).

3 In the terminology of Frantz (2009) this is an abstract nominalization.

Blackfoot; though I will argue that not all of the verbal stems that appear to function as nouns are truly nouns, but pattern with relative clauses (5).

(5) NULL NOMINALIZATION OF BLACKFOOT VERBAL STEM

Á-	ottak	**-i**	**-ø**	-iksi
IMPF-	√give.a.drink	**-INTR**	**-NMZ**	AN.PL

'Bartenders' (Frantz & Russell 1995:12)

The question for us here will be how we can distinguish between a deverbal stem and a (still-)verbal stem, which I will pursue in the next sections.

2.2 Relative clauses are not agent nominalizations

Based on a survey of 78 languages, Baker & Vinokurova (2009) propose that agent nominalizations (such as *sing-er* in English) are nominalizations of big V, and therefore lack clausal functional categories. A resulting prediction is that a number of functional phrases are not projected within agent nominalizations, such as AdvP (assuming that AdvP is not Merged within VP, cf. Cinque 1999), Neg P (Pollock 1989, Zanuttini 1997), Comp/epistemic modals (Bliss & Ritter 2008, Cinque 1999, Speas 2004), and Tense.

Johansson (2010) shows that all clausal functional categories are available in relative clauses, with no known exceptions (6).[4]

(6) a. ADVP

Nit-	ii-	ino	-aa	-wa	ann	-wa
1-	?-	see	-DIR	-3S	DEM	-AN.SG
á-	**sstsim-**		yo'kaa	**-wa**		
IMPF-	**reluctant-**		sleep	**-AN.SG**		

'I saw that one that doesn't want to sleep.'[5]

b. NEGP

Ann	-wa	**maat-**	á-	yo'kaa	**-wa**
DEM	-AN.SG	**NEG-**	IMPF-	√sleep	**-AN.SG**

'That one who is not sleeping.'

4 Unless a citation is given, all of the following examples come from my own fieldwork.

5 Verbal and nominal inflectional morphemes are ambiguous in the singular. I analyze these morphemes as nominal based on the contexts in which the forms can appear, and the translations/comments of my consultants. Where possible, I provide plural forms.

c. COMP
Om -iksi **ná-** sinoi'sskip **-iksi**
DEM -AN.PL **MOD-** kiss **-AN.PL**
n- ínsst -yi n- i's -aawa
1- older.sister -OBV.SG 1- older.brother-PRO
'Those ones that kissed my sister are my brothers.'

d. TENSE
Ann -wa **áak-** yo'kaa **-wa**
DEM -AN.SG **FUT-** sleep **-AN.SG**
'That one who will sleep.'

Based on this evidence, I draw the interim conclusion that relative clauses are not agent nominalizations. This conclusion is supported by the availability of non-agentive relative clauses. While we predict that non-agentive *-er* nominalizations are at best rare in any language (consider the English unaccusative *-er* nominal, "That turkey is a good broiler." cf. Lieber (2004)), there is an additional language-specific factor to consider in this case. Blackfoot places a restriction on external arguments, which must be both grammatically and logically animate. This excludes constructions like (7), the grammatical form of which is, 'Those branches were cut off *by means of* that knife' (Frantz 2009).

(7) *Oma isttoána ikahksínima annistsi ikkstsíksiistsi.
That knife cut off those branches. (Frantz 2009:46)

However, relative clauses can contain unaccusative verbs and be headed by grammatically and logically inanimate nouns (8).

(8) Om -istsi áak- omatap-**ikokoto**-istsi aohkíí -yi -aawa
DEM -IN.PL FUT start- **freeze** -AN.PL water -3PL -PRO
'Those ones (inainimate) that are starting to freeze are water.'

I take the above evidence as sufficient to conclude that Blackfoot relative clauses are not agent nominalizations. However, there is another possibility: they could be nominalized clauses. I address this possibility in the next sub-section.

2.3 Relative clauses cannot be possessed or modified by adjectives

As mentioned above, there are deverbal nouns in Blackfoot which function like nouns in the grammar. These deverbal nouns are listed as nouns in the dictionary (9) and can be possessed and modified by adjectives (10).

(9) DICTIONARY ENTRY FOR 'WAGON'
áínaka'si
nan; wagon, lit: it rolls (Frantz & Russell 1995:7)

(10) a. POSSESSION

Nit-	áínaka'si	**-im**	-wa
1-	wagon	**-POSS**	-AN.SG

'My wagon.'

b. ADJECTIVAL MODIFICATION

Pok-	áínaka'si	-iksi
little-	wagon	-AN.PL

'Little wagons.'

In contrast, relative clauses can be neither possessed nor modified by adjectives, which I demonstrate in the next two sub-sections.

2.3.1 Relative clauses cannot be possessed

When used in a relative clause, verbs like 'cook' (11) cannot be possessed. In (12a) I show that it is ungrammatical to possess the verbal stem; but in (12b) a nominal form 'cooking woman' is possessed without issue.

(11) DICTIONARY ENTRY FOR 'COOK'
ooyo'si
vai; prepare food for a meal, cook (Frantz & Russell 1995:170)

(12) a. POSSESSION

* Nit-	á-	ooyo'si	-im	-wa
1-	IMPF-	cook	-POSS	-AN.SG

'My cook.'

b. POSSESSION OF A NOMINAL FORM

Nit-	á-	ooyo'si	-aakíí	-im	-wa
1	IMPF-	cook	-woman	-POSS	-AN.SG

'My cook.'

However, note that the word for 'bartender' is listed as a noun in the dictionary (13); but only one of my consultants found possession of this noun to be grammatical (14). One possible interpretation of this finding is that the transition from verbal stem to nominal stem is gradual, and that deverbal nouns in the Blackfoot lexicon began their lives as relative clauses. This, we might say,

is one form that is in transition.

(13) DICTIONARY ENTRY FOR 'BARTENDER'
áóttaki
nan; bartender; lit: one who serves drinks (Frantz & Russell 1995:12)

(14) POSSESSION

? / *	Nit-	á-	ottaki	-im	-wa
	1	IMPF	give.a.drink	-POSS	-AN.SG

'My bartender.'

2.3.2 Relative clauses cannot be modified by adjectives

Before considering adjectival modification in Blackfoot, some background is necessary. Blackfoot does not have a class of adjectives *per se*, but rather a set of attributive roots (cf. Armoskaite 2010, Frantz 2009, Frantz & Russell 1995). These roots are interpreted as adverbs when modifying verbal stems and as adjectives when modifying nominal stems.

(15) a. ADVERBIAL MODIFICATION

Ikkina-	í'poyi	-t
soft/slow-	speak	-IMPER

'Speak slowly/clearly!'

b. ADJECTIVAL MODIFICATION

Ikkina-	i'ksisako	-istsi
soft/slow-	meat	-IN.PL

'Soft meats.' (Armoskaite 2010:26)

If relative clauses are nominalizations, the interpretation of an attributive should be ambiguous between an adverbial and an adjectival interpretation, as schematized below (16).

(16) a. ADVERBIAL INTERPRETATION
[Attributive + verbal complex] + nominalization

b. ADJECTIVAL INTERPRETATION
Attributive + [verbal complex + nominalization]

What we find, however, is that only the adverbial interpretation is available (18). To get an adjectival interpretation we need an overt nominal (19) This is evidence that Blackfoot relative clauses are not nominalized clauses.

(17) DICTIONARY ENTRY FOR 'SLEEP'
yo'kaa
vai; sleep (Frantz & Russell 1995:270)

(18) ADVERBIAL MODIFICATION

Om	-iksi	omahk-	á-	yo'kaa	-iksi	n-oko's	-aawa
DEM	-AN.PL	big-	IMPF-	sleep	-AN.PL	1-offspring	-PRO

'Those big sleepers are my children.'
- ✓ Adverbial: They sleep a lot, during the day for example – habitual sleepers
- × Adjectival: The sleepers are physically large

(19) ADJECTIVAL MODIFICATION

Om	-iksi	omahk-	saahkómaapi	-iksi	á-	yo'kaa	-iksi
DEM	-AN.PL	big-	boy	-AN.PL	IMPF-	sleep	-AN.PL
n-	oko's	-aawa					
1-	offspring	-pro					

'Those (physically) big boys who are sleeping are my children.'

2.4 Summary

The findings in this section do not support an analysis of relative clauses as nominalizations. This is schematized in the following table.

Table 1. *Summary of nominalization findings*

DIAGNOSTIC	PREDICTION: AGENT NOMINALIZATION	PREDICTION: NOMINALIZED CLAUSE	FINDINGS
Clausal/functional morphology	×	✓	✓
Non-agentive/ unaccusative	×	✓	✓
Possession	✓	✓ / ?	×
Adjectival modification	✓	✓	×

3 Relativizing various grammatical roles

The Blackfoot construction under investigation in this paper is the primary relative clause strategy of the language, following Keenan and Comrie (1977). Their noun phrase accessibility hierarchy is given below (20).

(20) NOUN PHRASE ACCESSIBILITY HIERARCHY
Subj. > Dir. obj. > Indir. obj. > Oblique > Genitive > Obj. of comparison

A primary relative clause strategy must relativize subjects; but need not relativize any lower grammatical roles in the hierarchy. The strategy we are considering here can be used to relativize subjects and direct objects. The head noun is optional (21)

(21) RELATIVIZATION OF VARIOUS GRAMMATICAL ROLES

a. SUBJECT

Om	-iksi	(n-i's	-iksi)	á-	yo'kaa	-iksi
DEM	-AN.PL	(1-older.brother	-AN.PL)	IMPF-	sleep	-AN.PL

'Those ones/My older brothers that are sleeping.'

b. ANIMATE DIRECT OBJECT OF A TRANSITIVE VERB

Ann	-yi	ot-	sinoi'sskip	-aa	-yi
DEM	-OBV.SG	3-	kiss	-DIR	-OBV.SG

'That one that he kissed.'

This strategy is possibly also used to relativize the secondary object of a ditransitive verb. Important to consider here is the fact that the following ditransitive verb is what Frantz (2009) refers to as a PARADITRANSITIVE verb. The direct object of a transitive verb is demoted to secondary object when an applicative argument (cf. Pylkkänen 2008) is added to the verb. This secondary object does not enter into an agreement relation with the verb; and note that the verbal complex in this relative clause construction does not agree in *phi*-features with the head noun as we expect; rather it agrees with the subject of the verb 'the boys'. The example given is also significantly degraded when the head noun is omitted, something that does not occur with the relativization of subjects and direct objects (22). More work is needed on the relativization of secondary objects in Blackfoot, but I leave open the possibility that this construction should receive the same analysis as those given above (21).

(22) RELATIVIZATION OF A SECONDARY OBJECT

Ann	**-yi**	-hka	?(napayín	-yi	-hka)	ann	-iksi	
DEM	**-IN.SG**	-INVS	bread	-IN.SG	-INVS	DEM	-AN.PL	
saahkómaapi	**-iksi**	ná-	ihkiit	-o	-yii	**-iksi**	-hka	
boy	**-AN.PL**	MOD-	bake	-BEN	-DIR	**-AN.PL**	-INVS	
ann	-yi	w-	iksisst	-oaawa	-yi	niitá'p-	yááhsii	-wa
DEM	-OBV.SG	3-	mother	-PL	-OBV.SG	really-	good	-3S

'The bread/?thing that the boys baked for their mother was delicious.'

Benefactive arguments and possessors are not available for relativization in Blackfoot. This sets this construction apart from similar constructions in related Algonquian languages. For example, possessors may be relativized in both Anishnaabemwin (Valentine 2001) and Fox (Goddard 1987).

Conservatively, Blackfoot can relativize subjects and direct objects using the primary relative clause strategy of marking a verbal complex with nominal agreement morphology.

(23) Noun phrase accessibility hierarchy (Blackfoot)
Subj. > **Dir. obj.** > *Indir. obj*. > *Oblique* > *Genitive* > *Obj. of comparison*

In the next sections I develop a preliminary proposal about the structure of this primary relative clause strategy.

4 Blackfoot relative clauses are full CPs

Evidence that relative clauses are full CPs comes from the Blackfoot system of obviation, which is used to distinguish between two animate third person arguments *within a single clause* (Bliss 2005, Frantz 2009). The more prominent argument in the clause is morphologically marked as proximate, while the less prominent argument is morphologically marked as obviative. This is exemplified below, where the agent, 'my son', is marked as proximate, while the patient of the verb 'your daughter' is marked as obviative (24).

(24) BLACKFOOT OBVIATION

Ik-	waakomimm	-yii	-wa	n-	ohkó	**-wa**
INT-	love	-DIR	-4S	1-	son	**-PROX.SG**
k-	itan	**-yi**				
2-	daughter	**-OBV.SG**				

'My son (proximate) loves your daughter (obviative).'

(Frantz 2009:54, ex.1)

While obviation is obligatory in clauses where there are two animate third person arguments, it is not required where there is only one animate third person argument.[6] I take this as evidence that relative clauses are full CPs, because proximate/obviative marking is decided within a relative clause. It is not possible to construct a transitive relative clause with two animate third person arguments in which both arguments are marked as proximate (25b). I hypothesize that this is because the head noun originates within the relative clause, and is raised out after obviation has been applied.[7]

(25) OBVIATION WITHIN A RELATIVE CLAUSE

a.

Nit-	ik-	waakomimm		-aa	-yini		
1-	INT-	love		-DIR	-4S		
ann	**-yi**		ot-	sinoi'sskip		-aa	**-yi**
DEM	**-OBV.SG**		3-	kiss		-DIR	**-OBV.SG**

'I love the one that he kissed.'

b.

*Nit-	ik-	waakomimm		-aa	-wa		
1-	INT-	love		-DIR	-3S		
om	**-wa**		ot-	sinoi'sskip		-aa	**-wa**
DEM	**-PROX.SG**		3-	kiss		-DIR	**PROX.SG**

Intended: 'I love the one that he kissed.'

The above examples warrant a bit more explanation before moving on. What they demonstrate is that the head of the relative clause forms a constituent with the relative clause CP, not with the matrix CP. This is schematized below. Note that (26a) and (26b) are representations of (25a) and (25b), respectively.

(26) RELATIVE CLAUSES ARE FULL CPS

a. $[_{\text{MatrixC}}\ \text{NP}_{\text{1st person}}\ \text{VP}\ \ [_{\text{RelC}}\ \text{NP}_{\text{proximate}}\ \text{VP}\ \ \text{NP}_{\text{obviative}}]]$

b. * $[_{\text{MatrixC}}\ \text{NP}_{\text{1st person}}\ \text{VP}\ \ \text{NP}_{\text{proximate}}\ \ [_{\text{RelC}}\ \ \text{NP}_{\text{proximate}}\ \ \text{VP}\ ]]$

Note also that recursive relative clauses constitute separate domains of *phi*-feature agreement, which is consistent with my suggestion that every relative clause constitutes a new CP (27).

6 One exception to this pattern is possessed nouns, which are obviative (Frantz 2009).

7 See also Johansson (2011) for more discussion of a raising analysis of Blackfoot relative clauses.

(27) RECURSIVE RELATIVE CLAUSE *PHI*-FEATURE AGREEMENT

[Om	**-iksi**	ii-	ohpommatoo	-m	**-iksi**		
DEM	**-AN.PL**	?-	buy	-THM	**-AN.PL**		
[ann	**-istsi**	-hka	ónnikis	**-istsi**	ii-	oka'pihtsii	**-istsi**]]
DEM	**-IN.PL**	-INVS	milk	**-IN.PL**	?-	spoil	**-IN.PL**
ákaa-	o'too	-yi	-aawa				
PERF-	arrive	-PL	-PRO				

'[Those ones who bought [those (cartons of) milk that were spoiled]] arrived.'

With this structural hypothesis in mind, in the next section I consider whether it is possible to capture relative clauses with an overt head noun and free relatives with a single structure.

5 Two constructions, or one?

Blackfoot relative clauses appear to be CPs with a DP super-structure. Overt head nouns are optional, as shown below (28).

(28) OPTIONAL HEAD NOUN

Om	-iksi	(n-	i's	-iksi)	á-	yo'kaa	-iksi
DEM	-AN.PL	(1-	older.brother	-AN.PL)	IMPF-	sleep	-AN.PL

'Those ones (my older brothers) who are sleeping.'

It is possible that these two formulations represent different syntactic structures, with and without an NP projection. However, I propose that even free relatives contain a null head noun, because they are countable (29).

(29) COUNTABLE FREE RELATIVE

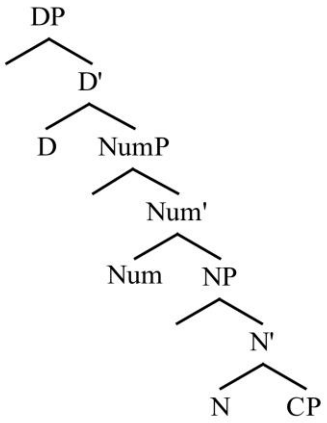
Om	-iksi	**naat-**	**itapi**		**-iksi**	(aakííkoan-iksi)	
DEM	-AN.PL	**two-**	**be.person**		**-AN.PL**	(girl	-AN.PL)
á-	yo'kaa	-iksi	ann	-wa			
IMPF-	sleep	-AN.PL	DEM	-PROX.SG			
n-	ínsst		-wa		w-	oko's	-iksi
1-	older.sister		-PROX.SG		3-	offspring	-AN.PL

'Those two ones (girls) that are sleeping are my older sister's children.'

The assumption that even free relative clauses contain a null head noun raises an issue for the present analysis. Why is it that a free relative with an NP projection cannot be possessed or modified by adjective? A possible solution is that this is a morphological restriction: the morphology associated with both possession and adjectival modification is dependent. I assume that only an overt

noun can bear this morphology. If this assumption is correct, both headed and empty-headed relative clauses contain an N projection. This is sketched out below (30).

(30) PROPOSED STRUCTURE OF BLACKFOOT RELATIVE CLAUSES



6 Conclusions and future work

In this paper I have argued against an analysis of Blackfoot relative clauses as nominalizations based on the morphological composition of relative clauses, the availability of non-agentive constructions, the impossibility of possession and the impossibility of adjectival modification. I have proposed that Blackfoot relative clauses contain full CPs based on obviation and agreement facts.

I assume that nominal functional categories like Num can only be Merged above Ns. Following from this, I propose that all relative clauses contain N projections because there is evidence for Num: empty-headed relative clauses are countable. That is to say, empty-headed relative clauses bear nominal number inflection which I assume is in Num. However, further evidence is needed for the assumption that N is present whenever Num is. Further evidence is also needed for the assumption that null N stems cannot be possessed or adjectivally modified for morphological reasons: Is this restriction possibly syntactic?

In his work on similar relative clause constructions in Passamaquoddy (Eastern Algonquian), Bruening (2001) identifies these constructions as relative clauses on the basis of long-distance extraction and island effects. I leave the elicitation of this type of data to future work.

Acknowledgments

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References

Armoskaite, Solveiga. 2010. The destiny of roots. PhD dissertation, Department of Linguistics, University of British Columbia.

Baker, Mark C., and Vinokurova, Nadya. 2009. On agent nominalizations and why they are not like event nominalizations. *Language* 85:517-556.

Bliss, Heather. 2005. Formalizing point-of-view in Blackfoot. MA thesis, Department of Linguistics, University of Calgary.

Bliss, Heather, and Ritter, Elizabeth. Submitted. Speaker certainty, event realization, and epistemic modality in Siksiká Blackfoot.

Bruening, Benjamin. 2001. Syntax at the edge: Cross-clausal phenomena and the syntax of Passamaquoddy. PhD dissertation, MIT

Cinque, Guglielmo. 1999. *Adverbs and functional heads: A cross-linguistic perspective.* New York: Oxford University Press.

Dunham, Joel. 2007. The "Durative" in Blackfoot: Understanding Imperfectivity. In *SULA 4: Semantics of Under-Represented Languages in the Americas*, ed. Amy Rose Deal: University of Massachusetts Occasional Papers in Linguistics.

Frantz, Donald. 2009. *Blackfoot grammar*, 2nd edition. Toronto: University of Toronto Press.

Frantz, Donald, and Russell, Norma. 1995. *Blackfoot dictionary of stems, roots and affixes*. Toronto: University of Toronto Press.

Glougie, Jennifer R.S. 2000. Topics in the Syntax and Semantics of Blackfoot Quantifiers and Nominals, Department of Linguistics, University of British Columbia.

Goddard, Ives. 2002. Grammatical Gender in Algonquian. In *Papers of the 33rd Algonquian Conference*, ed. H.C. Wolfart, 195-231: Winnipeg: University of Manitoba.

Goddard, Ives. 1987. Fox participles. In P. Kroeber and R. Moore, eds. *Native*

American languages and grammatical typology, pp. 105-118. Bloomington, Indiana: Indiana University Linguistics Club.

Grimshaw, Jane. 1990. *Argument Structure*. Cambridge, Mass: MIT Press.

Hanson, Rebecca. In prep. A Grammar of Yine (Piro). PhD dissertation, La Trobe Univeristy.

Johansson, Sara. 2011. Towards a typology of Algonquian relative clauses. In *University of British Columbia Working Papers in Linguistics: Proceedings of WSCLA 16*, eds. Meagan Louie and Alexis Black. Vancouver: University of British Columbia. [in press]

Johansson, Sara. 2010. *Phi*-feature concord on Blackfoot relative clauses. Paper presented at the 42nd Algonquian Conference, Memorial University of Newfoundland, October 21-24.

Johansson, Sara. 2007. Sentient and Stem Agreement in Blackfoot. In *Papers of the 39th Algonquian Conference*, eds. Regna Darnell and Karl S. Hele. London: University of Ontario.

Keenan, Edward L. 1985. Relative clauses. In T Shopen, ed. *Language typology and syntactic description,* vol. 2. Cambridge, UK: Cambridge University Press, pp. 141-170.

Keenan, Edward L. and Bernard Comrie. 1977. Noun phrase accessibility and Universal Grammar. *Linguistic Inquiry* 8(1):63-99

Lieber, Rochelle. 2004. *Morphology and lexical semantics.* Cambridge, UK: Cambridge University Press.

Pollock, Jean-Yves. 1989. Verb movement, universal grammar, and the structure of IP. *Linguistics Inquiry* 20:365-424.

Pylkkänen, Liina. 2008. *Introducing arguments*. Cambridge, Mass: MIT Press.

Ritter, Elizabeth. 1992. Cross-linguistic evidence for Number Phrase. *Canadian Journal of Linguistics* 37:197-218.

Ritter, Elizabeth, and Rosen, Sara Thomas. 2009. Animacy in Blackfoot: Implications for Event Structure and Clause Structure. In *Syntax, Lexical Semantics and Event Structure*, eds. E. Doron, I. Sichel and M. Rappaport-Hovav. Oxford: Oxford University Press.

Speas, Margaret. 2004. Evidentiality, logophoricity and the syntactic representation of pragmatic features. *Lingua* 114:255-276.

Uhlenbeck, C. C. 1938. *A Concise Blackfoot grammar : based on material from the southern Peigans*: Verhandelingen der Koninklijke Nederlandse Akademie van Wetenschappen, Afd. Letterkunde. New York AMS Press, 1978.

Valentine, Rand. 2001. *Nishnaabemwin reference grammar.* Toronto: University of Toronto Press.

Zanuttini, Raffaella. 1997. *Negation and clausal structure*. Oxford: Oxford University Press.

Focus and relativization: Head-final relatives in Thompson Salish

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This paper presents previously unreported data on relatively rare head-final relatives in Thompson River Salish. I show that head-final relatives are used in discourse contexts where narrow focus falls on the relative clause itself, excluding the final head noun. As a result, this is the first report of narrow focus marking within a nominal domain in Salishan; previous accounts of focus marking in Salish have observed that the focus is always associated with the matrix predicate. While focus marking in both the nominal and predicate domain can be characterized as following a linear FOCUS >> BACKGROUND order, focus sensitive expressions (*only*) cannot associate with in situ nominals. This suggests that there are two focus marking strategies at work in the language: a syntactic strategy (focus=predicate), and a prosodic one (left alignment). Only the former is relevant for truth-conditional uses of focus (e.g. association with *only*).

1 Introduction

Why do we use relative clauses? Pragmatically, restrictive relative clauses provide a more specific referent relative to some discourse alternative (e.g. Weinert 2004; see also Wiltschko, this volume, on descriptive relative clauses, which cannot serve this function). As Downing and Mtenje (2011) observe, this satisfies common definitions for focus (e.g. Rooth 1992). Processing studies have shown that nominal modifiers, including relative clauses, are inherently related to focus (Sedivy et al. 1999, cited in Downing & Mtenje 2011, on modifiers and contrastive focus; Ni et al. 1996, Liversedge 2002 on the focus sensitive expression *only* facilitating relative clause processing). It is from this information structure perspective that I wish to pursue the distinction between head-initial and head-final relative clauses in Nɬeʔkepmxcín (Thompson River Salish).

In this paper I have two modest goals. The first is to provide some examples of (relatively rare) head-final relatives in Nɬeʔkepmxcín, from recent original fieldwork. The second goal is to think about what factors condition the use of head-initial versus head-final relatives. I shall suggest that the variation is related to focus. When focus falls on the entire noun phrase containing the

relative clause, head-initial relatives are used. However, when narrow focus falls on the relative clause itself, excluding the head noun, head-final relative clauses may be used. The effect is to linearize FOCUS before BACKGROUND, parallel to previous focusing strategies observed in Nɬeʔkepmxcín. However, this focus marking occurs inside the nominal domain, whereas previous work on Salishan has described the focus system as purely predicative (Kroeber 1997, Koch 2008, Koch & Zimmermann 2010; Davis 2007 for St'át'imcets, Benner 2006 for Sencóthen, Davis & Saunders 1978, Beck 1997 on Nuxalk (Bella Coola)).

The paper is organized as follows. Section 2 reviews previous work on Nɬeʔkepmxcín relative clauses, and introduces new data on head-final relatives. Section 3 examines the broader contexts in which head-final relatives arise, with specific reference to focus marking in Nɬeʔkepmxcín. Section 4 concludes.

2 Relative clauses in Thompson

Nɬeʔkepmxcín is an endangered Northern Interior Salish language. The data in this paper come from original fieldwork with two speakers of the Lytton (*ƛ̓q'əmcín*) dialect. Like all Salish languages, Nɬeʔkepmxcín is predicate initial (Thompson & Thompson 1992, Kroeber 1997, 1999, Koch 2008, to appear).

There are three types of relative clauses: head-initial and headless relative clauses are quite common, while head-final relatives are relatively rare.[1] Paul Kroeber's (1997, 1999) excellent account of the morpho-syntax of relative clauses treats head-initial and headless relatives in detail. The basic form for head-initial relative clauses is shown in (1a): a determiner precedes the head NP, while a second determiner precedes the relative clause itself. The head NP and relative clause are joined by the LINK proclitic *t* (what Kroeber calls the "attributive" marker). A head-initial relative is shown in (1b), and the structure that I am assuming in (1c). This follows previous work by Kroeber (1997, 1999), Davis (2004), Koch (2006), and most recently Davis (2010), which argues for a matching analysis of relative clauses in both St'át'imcets (Lillooet) and Nɬeʔkepmxcín Salish. Under this account, the head NP_1 is generated external to the relative clause, while fronting of a relative-clause internal DP generates the second determiner that precedes the relative clause itself. The relative clause internal NP_2 is deleted under matching with the head NP_1 (Sauerland 2004, Hulsey and Sauerland 2006), shown by strikethrough.

[1] I don't discuss locative relatives here, a variant of the head-initial and headless varieties. See Kroeber 1997, 1999, and Koch 2008b.

(1) a. Head-initial relative clause template:
DET NP LINK DET RELATIVE CLAUSE

b. e=cítx^{w} t=ɬ=s=cuw-éɬx^{w}=s ɬ=Jóhn[2]
DET=house LINK=DET=NOM=build-house=3PoCl DET=John
'the house which John built'

c. [$_{DP}$ e=[$_{NP}$ [$_{NP1}$ cítx^{w}] [$_{CP}$ t=[$_{DP}$ ɬ=~~NP2~~]$_{i}$ s=cuw-éɬx^{w}=s ɬ=Jóhn t_{i}]
DET= house LINK=DET=NOM=build-house=3PoCl D=John t_{i}
'the house which John built'

The basic form for headless relatives is shown in (2a), while (2b) shows a sentence containing a headless relative DP. Inside the DP containing the relative, there is no overt NP corresponding to the noun 'question' in the English translation. The link marker and second determiner are also not used, presumably due to a morphological restriction preventing the linear cooccurrence of two determiners (Davis's 2010 *Double Determiner Filter*).

(2) a. Headless relative clause template:
DET RELATIVE CLAUSE

b. sew-ín'-t-iy-e t=[$_{DP}$ k=s=cúw=kt x^{w}úy'].
ask-RPT-TR-1PL.O-2SG.IMP OBL=DET$_{IRL}$=NOM=work=1pl.PoCl FUT
'Ask us (some questions) that we're going to work on.'

On the head-final/head-initial distinction, Kroeber observes that "the relative clause normally follows its head" (1997: 385). Head-final relative clauses are much less common; in fact, Kroeber provides only a single case of a Thompson head-final relative (the intransitive stative *ʔescaʕ* shown in 3), which he suggests may not be a relative clause at all, but some sort of adjectival

[2] See Thompson and Thompson (1992, 1996), Kroeber 1997, Koch 2008, for keys to the orthography and further details on glossed morphemes. '-' marks an affix, and '=' a clitic; acute stress marks word-level stress. Abbreviations used in glosses are: 1,2,3 = 1st, 2nd, 3rd person, AUG = augmentative reduplicant, BG = background, CLEFT = cleft predicate, CnCl = conjunctive subject clitic, C(OMP) = complementizer, DEM = demonstrative, D(ET) = determiner, DP = determiner phrase, FOC = focus, FUT = future, IM = immediate (intransitive), IMP = imperative, IMPF = imperfective, InCl = indicative subject clitic, INTR(ANS) = intransitive, IRL = irrealis, LINK = link marker, LOC = locative, MDL = middle (intransitive), NEG = negation, NOM = nominalizer, NP = noun phrase, O(BJ) = object, OBL = oblique, PL = plural, PoCl = possessive subject clitic, Q = yes/no question, RC = relative clause, RFM = reaffirmative, RPT = repetitive, SG = singular, STAT = stative, S(UBJ) = subject, TR(ANS) = transitive, TS = transitive suffix, VP = verb phrase.

modifier, similar to the form *torn* in the English translation.

(3) e=ʔes-cáʕ t=e=nƛ̓ píc'eʔ
DET=STAT-tear LINK=DET=shirt
'the torn shirt' (Kroeber 1999:256)

In the remainder of this section I show new examples of head-final relatives that include more than a simple intransitive (possibly adjectival) verb form – that is, these involve true relatives clauses. They take the basic form in (4). Comparing with (1a), we see that the head NP and relative clause have changed position, but the remaining morphology remains unchanged.

(4) Head-final relative clause template:
DET RELATIVE CLAUSE LINK DET NP

(5) shows a relative clause with an intransitive predicate like (3), but the relative clause in addition contains possessive 2SG subject marking morphology *eʔ*, as well as the nominalizer *s*. Example (6) shows another intransitive case with a different verb, *kʷukʷ*, also marked with possessive subject morphology *eʔ=s=*. (Note that formally intransitive verbs, like "middle" marked *kʷnəm* 'get' in (5), and *kʷukʷ* 'cook' in (6), can take oblique objects. That is, the head NP *keks* 'cake' in (5) is matched with a relative clause internal oblique object DP. Extraction of oblique objects is maked via nominalization morphlogy (Kroeber 1997, 1999).)

(5) ɬ=eʔ=s=kʷn-ə́m t=e=kéks
DET=2SG.PoCl=NOM=get-MDL LINK=DET=cake
'the cake that you bought' [770aPM]

(6) h=eʔ=s=kʷúkʷ t=e=stú
DET=2SG.PoCl=NOM=cook[INTRANS] LINK=DET=stew
'the stew that you cooked' [726dFE]

In (7), a relative clause with a transitive form of the verb 'bite,' complete with transitive, subject and object morphology, precedes the head NP *sqáqxaʔ* 'dog.' (8) contains another transitive verb 'help' in a relative clause preceding the head NP *smúɬec* 'woman.'

(7) e=qəl-t-sí-s t=e=sqáqxaʔ
DET=bite-TRANS-2SG.OBJ-3TS LINK=DET=dog
'the dog that bit you' [PM013]

(8) e=kən-t-sém-s t=e=smúɬec
DET=help-TRANS-1SG.OBJ-3TS LINK=DET=woman
'the woman that helped me' [PM012]

The relative clause in (9) contains a transitive verb, but also the future auxiliary *x^{w}uy'*. (A quantifier *tekm us* precedes the initial determiner as well.)

(9) tékm=us e=x^{w}úy' q^{w}əz-t-éne t=e=n-sɬaʔxa̓ns
all=3CnCl DET=FUT use-TRANS-3OBJ.1SG.TS LINK=DET=1SG.POSS-food
'all the food that I had to use' (lit. 'all the I had to use food') [783cPM]

Finally, in (10), the relative clause contains the negation predicate *tete?*, possessive subject morphology, and a second postion clitic *i?* 'yet,' all of which precede the head NP 'huckleberry.'

(10) e=teté? k=s=q'^{w}íy-t=s=i? t=e=c'əl-c'ále
DET=NEG C=NOM=ripe-IM=3PoCl=yet LINK=DET=AUG-huckleberry
'the huckleberries that weren't yet ripe' [742fFE]

3 Head-final relatives in context

In this section, I will examine the wider discourse contexts for head-final relatives in Thompson. We shall see that the head-final relative is employed where narrow focus falls on the relative clause itself, while the head noun is backgrounded (given) in the discourse. I will make a few observations about issues that this raises for focus marking in Nɬeʔkepmxcín.

I'll use two classic diagnostics for focus. Let's look at some non-relative clause cases to begin with. The first focus diagnostic is the answer to a wh-question. In (11), the wh-question targets a wide VP focus, and we see that B's answer is a verb-initial form (the basic Salish clause type), starting with the verb *nk^{w}isk^{w}u* 'fall into water.' The VP is marked with a syntactic FOCUS (FOC) feature that mediates semantic interpretation of focus (e.g. association of truth conditional particles like *only* – see Koch & Zimmermann 2010 on Thompson). The subject DP *Monik* is BACKGROUND (BG) (von Stechow 1990, Krifka 2006).

(11) VP focus after a wh-question: verb-initial form
a. kénm=meɬ=xeʔe e=Moník.
which=indeed=DEM DET=Monique
'What happened to Monique?' [761lPM]
b. [$_{VP}$ n-k^{w}ís-k^{w}u=xeʔ [e=Moník]$_{BG}$ u=cíʔ u=ɬe=q^{w}uʔ-ʔúy]$_{FOCUS}$
LOC-fall-water=DEM DET=Monique to=there to=DET=water-RFM
'[Monqiue]$_{BG}$ [fell into the river]$_{FOC}$.'

In (12), the wh-question *swet* 'who' targets a narrow subject focus. Since predicates are always initial in Thompson Salish matrix clauses (Koch to appear), and DPs are not predicates, B's reply uses a cleft predicate *c'e* to mark the focus on the DP *Sam*. The cleft structure thus maintains a predicate-initial form, and also the generalization that the predicate (here the cleft VP containing the cleft predicate *c'e* and the focused subject DP *Sam*) is marked with a FOCUS feature. BACKGROUND information is in a cleft remnant clause following the focus (see Koch 2008, 2008b for discussion). The generalization for focus marking is thus a syntactic one: the focus is (part of) the matrix predicate (here, VP).

(12) Subject DP focus after a wh-question: DP cleft
a. swét=me=xeʔ k=xáx̌′-m u=cíʔ u=e=syép ....
who=indeed=DEM C=climb-MDL to=there to=DET=tree
'Who climbed the tree .... (to get the ball that was stuck there)?'
b. [$_{VP}$ c'é he=Sám]$_{FOCUS}$ [u=cíʔ e=xáx̌′-m]$_{BACKGROUND}$.
CLEFT DET=Sam to-there COMP=climb-MDL
'It was [Sam]$_{FOCUS}$ [that climbed (the tree) there]$_{BACKGROUND}$.' [761gPM]

A second common diagnostic for focus is a contrastive configuration where two symmetrical phrases, differing in one element (the focus), stand in opposition (e.g. Rochemont 1986, Rooth 1992, Féry & Samek-Lodovici 2006). In (13), speaker B contrasts the subject *Patricia* with the subject *Flora* in speaker A's yes/no question. This subject DP focus is marked via clefting, like in (12). (Note that the contrastive symmetry is not under syntactic identity, since A uses a auxiliary/verb-initial form, while B uses a subject DP cleft. Rather, the symmetry is on the level of focus/background structure.)

(13) Subject DP focus in a contrastive context: DP cleft
a. ʔéx=n'=me=xeʔ=neʔ p'-ə́m e=Flóra
IMPF=Q=indeed=DEM=there hang-MDL DET=Flora
t=e=x^{w}eʔpít-s u=cíʔe, k'éx-es.
OBL=DET=clothes-3POSS to=there, dry-TRANS.3OBJ.3TS
'Did Flora hang up some clothes, to dry?' [819kFE]
b. téʔe. [$_{VP}$ c'é e=Patrícia]$_{FOCUS}$
NEG. CLEFT DET=Patricia
[e=ʔéx k'éx-es e=stq̓ákn-s.]$_{BACKGROUND}$
COMP=IMPF dry-TRANS.3OBJ.3TS DET=sock-3POSS
'No. It's [Patricia]$_{FOCUS}$ that [is drying her socks]$_{BACKGROUND}$.'

While the focus marking system here is characterized as syntactic (a focus feature associates with the matrix predicate), there is also a linear phonological

effect: the focus is the first lexical information, while backgrounded information follows the focus. Thus, there is a general FOCUS >> BACKGROUND order (see Mithun 1987 on other North American languages with FOCUS >> BACKGROUND order; Ariel 2010: 209 for discussion).

Now let's look at some discourse contexts where head-final relatives are used. We'll use the same diagnostics for focus to see what effect there is on relative clauses. Example (14) is from a discourse describing two mice in a picture. The relevant contrast set for (14) is {the mouse that is standing on the ground, the mouse that is sitting on the boxes}.

(14) Wh-question targeting narrow focus on a relative clause:

a. hén' kə=ses-q'^{w}íƛ'.
which COMP=STAT-smile
'Which (one) is smiling?'

b. c'é=neʔ [$_{DP}$ e=[$_{RC}$ ʔéx ʔestéɬix n=e=ƛ'əp']$_{FOC}$
CLEFT=there DET=IMPF stand in=D=ground
t=e=[$_{NP}$ k'^{w}etn'íʔ]$_{BG}$] [e=ʔéx ʔes-q'^{w}íƛ']$_{BACKGROUND}$
LINK=DET=mouse COMP=IMPF STAT-smile
'It's the [mouse]$_{BG}$ that [$_{RC}$ is standing on the ground]$_{FOC}$ [that is smiling]$_{BG}$.'
(more literally: 'It's the [$_{RC}$ is standing on the ground]$_{FOC}$ [mouse]$_{BG}$ [that is smiling]$_{BG}$') [631eFE]

In (14), speaker A asks which mouse is smiling. *Mouse* is backgrounded in the prior discourse context – in fact, the speaker does not pronounce it all. The wh-word *hen'* targets the focus, a nominal modifier, in this case a relative clause. In speaker B's answer, we see that, when the narrow focus falls on the relative clause (RC) itself, excluding the head, a head-final relative is employed. In addition, the entire DP containing the relative clause is clefted. The effect is that the focused relative clause is the leftmost lexical content of the utterance, while all backgrounded information, including the head NP and the final cleft clause, follows the focus in the linear string. This head-final relative clause, notably, also violates the Same Side Filter (Ross 1973), which mitigates against relative clauses whose main predicate (here the verb 'stand') is separated by additional lexical material from the head NP modified by the relative clause.

Note that the syntactic focus marking that I have provided in the bracketing in (14) is rather different from that in (11-13), since it is associated with the relative clause (RC), and not with the matrix cleft-VP predicate. We may well wonder if this is truly grammatical focus marking, or just pragmatically inferred, given that Koch and Zimmermann (2010) showed that the truth conditional operator 'only' must associate with the focused predicate. An alternative, which maintains the focus=predicate generalization, is to focus mark

the entire cleft predicate as before, but mark 'mouse' as backgrounded within this. Here we may follow Aloni and van Rooy (2002: 26), who assume that "a which-phrase gives rise to the presupposition that the set over which it ranges is already given as a topic," where topics are backgrounded. In (14), 'mouse' is the set being ranged over by the *hen'* phrase. Under this analysis, the FOCUS and BACKGROUND marking would look as in (14'):

(14') b. [$_{VP}$ c'é=ne ʔ [$_{DP}$ e=[$_{RC}$ ʔéx ʔesté ɬix n=e=ƛ' əṕ'] t=e=[$_{NP}$ k'^{w}etn'íʔ]$_{BG}$]$_{FOC}$
CLEFT=there DET=IMPF stand in=D=ground LINK=DET=mouse
[e=ʔéx ʔes-q'^{w}íƛ']$_{BACKGROUND}$
COMP=IMPF STAT-smile
'It's [the [mouse]$_{BG}$ that [$_{RC}$ is standing on the ground]]$_{FOC}$ [that is smiling]$_{BG}$.'
(more literally: 'It's [the [$_{RC}$ is standing on the ground] [mouse]$_{BG}$]$_{FOC}$ [that is smiling]$_{BG}$') [631eFE]

I won't mark the focus/background distinction as in (14') in the rest of this section; rather, I'll stick to the marking in (14), to illustrate what we (at least pragmatically) understand to be the narrow focus in these examples: the relative clause itself. Just bear in mind that this pragmatic marking may not correspond to a formal syntactic FOCUS or BACKGROUND feature.

Let's turn to another discourse that produces a head-final relative. Example (15) comes from a context in which various cuts of meat at a butcher's shop are under discussion. Relevant discourse alternatives for (15) are the set {the meat that is lying on the table, the meat that is hanging}.

(15) Contrastive context targeting narrow focus on a relative clause:
a. e=Róss, ník'-es=n'=xeʔe e=smíyc neʔ n=e=típl.
DET=Ross, cut-TR.3O.3TS=Q=DEM DET=meat there in=DET=table
'Is Ross cutting the meat that is on the table?' [840fFE841cPM]
b. téʔe. c'é=neʔ [$_{DP}$ e=[$_{RC}$ ʔes-ɬwáqs]$_{FOCUS}$ t=e=[$_{NP}$ smíyc]$_{BG}$]
NEG. CLEFT=DEM DET=STAT-hang LINK=DET=meat
[e=ʔéx ník'-es]$_{BACKGROUND}$
COMP=IMPF cut-TR.3O.3TS
'No. It's [the meat]$_{BG}$ [$_{RC}$ that's hanging]$_{FOC}$ [that he's cutting]$_{BG}$.'
(more literally: 'It's the [$_{RC}$ hanging]$_{FOC}$ [meat]$_{BG}$ [that he's cutting]$_{BG}$')

In (15), speaker A uses a yes/no question to ask if Ross is cutting the meat that is on the table. The head NP *smiyc* 'meat' is backgrounded in the context, being overtly given in A's question. Parallel to (13), speaker B employs corrective focus to say that it is the meat that is hanging that Ross is cutting (not

the meat on the table). This gives rise to narrow focus on the relative clause itself. The target structure once again employs a head-final relative, and again the whole DP containing the relative clause is clefted. Once more the effect is for narrowly focused information to linearly precede all backgrounded information.

The final example I will look at is the relative clause from (10). Speakers were provided the discourse context in (16), which they then translated into Nɬeʔkepmxcín. In the target clause, *then he ate some huckleberries that weren't even ripe*, the head noun *huckleberries* is backgrounded from the previous sentence, while the relative clause *that weren't even ripe* is not. This contrasts huckleberries that are ripe (which we typically eat) with huckleberries that are not ripe.

(16) CONTEXT: Tom picked and ate some huckleberries. He was very hungry though, so then he ate some huckleberries that weren't even ripe. [742fFE]

(17) ʔe s=[$_{VP}$ ʔúpi-s e=[$_{RC}$ teté ʔ
and NOM=eat-TRANS.3OBJ.3TS DET=NEG
k=s=q'^{w}íy-t=s=iʔ]$_{FOCUS2}$ [t=e=[$_{NP}$ c'əl-c'ále]$_{BG}$]]$_{FOCUS1}$
C=NOM=ripe-IM=3PoCl=yet LINK=DET=AUG-huckleberry
'And then he [ate the [huckleberries]$_{BG}$ that [weren't yet ripe]$_{FOC2}$]$_{FOC1}$.'

In (17), the final utterance of this context is shown in Nɬeʔkepmxcín. Consistent with the previously observed pattern, the speaker produces a head-final relative, such that the focused relative clause precedes the backgrounded head NP *c'əlc'ále*. Unlike the cases in (14) and (15), however, the entire DP containing the relative clause is not clefted here. In fact, it appears in a verb-initial utterance, which marks a focus on the VP (11). Conceivably, this utterance thus contains two foci, FOCUS1 and FOCUS2 as I have indicated: the speaker firstly marks the VP (that Tom *ate the huckleberries that weren't ripe*) as focused new information, and in addition marks the relative clause as contrastively focused (i.e. unripe versus ripe huckleberries) (see Koch & Zimmermann 2010, Koch 2011, on focus marking within a speaker's discourse turn). The use of the head-final relative here may thus signal focus marking within the in situ nominal argument (see Rooth 1992 on the focus operator attaching to the N' level of syntax in "farmer" sentences). This again raises the question of whether with FOCUS2 we are dealing with a different sort of focus marking than the strictly matrix VP-oriented focus marking of FOCUS1 and in (11-13).

4 Conclusion

Previous work on focus in Thompson and other Salish languages has shown that focus is associated with the matrix predicate (see 11-13). Head-final relatives

also seem to be associated with narrow focus on the relative clause, but do not match the general focus=predicate strategy, since relative clauses cannot be matrix predicates.

Because Thompson Salish is strictly predicate initial, the effect of the focus=predicate strategy in (11-13) is also to linearize focused information before backgrounded information. In head-final relative contexts, we have seen the same FOCUS >> BACKGROUND ordering, though within the DP and not necessarily in the clausal domain (e.g. in an in situ DP in 17). Thus, the focus account of head-final relatives looks like it has promising parallels in the general focus marking system, but in terms of linearity, **not** FOCUS features on the VP.

Does this mean that we give up the syntactic characterization of focus=predicate? In that case, we would have to account for our focus marking prosodically, in terms of left alignment: roughly, the focus is the leftmost lexical material in the focus domain (see Koch 2008; also Truckenbrodt 1995).

It is not clear, though, that this is a good solution. The focus sensitive particle *ƛ̓u?* 'only' associates strictly with syntactically marked foci (Koch & Zimmermann 2010; Rooth 1996). In (18), *ƛ̓u?* 'only' can associate with the matrix verb or VP, but crucially not with in situ DPs. This is consistent with the syntactic analysis where the association of *ƛ̓u?* 'only' is sensitive to a syntactic focus feature on the matrix VP, but not to linear order in a nominal (or verbal) domain.

This suggests that there may be two focus marking strategies operating in the language. The syntactic strategy is targeted by focus sensitive particles and is thus relevant for truth conditional uses of focus, while the prosodic strategy (left-alignment) has no apparent truth-conditional effects. The syntactic focus strategy (FOCUS marking on the matrix predicate) can be only used once per matrix clause, while the prosodic strategy can be used in every relevant prosodic domain (e.g. in each phonological phrase). Whether the linear focus marking in head-final relative observed here can be reduced to a pragmatic effect, or whether we are dealing with a truly different type of grammatical focus marking here, is an issue for future research.

(18) [$_{VP}$ nʕʷɬqʷ-əḿ=kn=ƛ̓u?=ne? t=e=he?úse?]$_{FOCUS}$.
boil-MDL=1SG.InCl=only=DEM OBL=DET=egg
'I only [$_{VP}$ boiled an egg]$_{FOC}$.' / 'I only [$_{VP}$ boiled]$_{FOC}$ an egg.'
(NOT * 'Only [$_{DP}$ I]$_{FOC}$ boiled an egg.' / * 'I boiled only [$_{DP}$ an egg]$_{FOC}$.')

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References

Ariel, M. (2010). *Defining pragmatics*. Cambridge: Cambridge University Press.

Beck, D. (1997). Rheme, theme, and communicative structure in Lushootseed and Bella Coola. In *Recent trends in Meaning-Text Theory*, ed. Leo Wanner, 93-135. Amsterdam: Benjamins.

Benner, A. (2006). The prosody of Senchóthen. Paper given at *The 41st ICSNL*, University of Victoria.

Davis, H. (2004). Locative relative clauses in St'át'imcets (Lillooet Salish). In *Papers for the 39th ICSNL*, eds. J.C. Brown and Tyler Peterson, 83-116. Vancouver: UBC Working Papers in Linguistics 14.

Davis, H. (2007). Prosody-focus dissociation and its consequences. Paper presented November 10, 2007, Nagoya, Japan.

Davis, H. (2010). A unified analysis of relative clauses in St'át'imcets. *Northwest Journal of Linguistics* 4(1): 1-43.

Davis, P. & Saunders, R. (1978). Bella Coola syntax. In *Linguistic studies of Native Canada*, eds. Eung-Do Cook and Jonathan Kaye, 37-66. Vancouver: University of British Columbia.

Downing, L. & Mtenje, A. (2011). Un-WRAP-ing prosodic phrasing in Chichewa. *Lingua* (to appear).

Féry, C. & Samek-Lodovici, V. (2006). Focus projection and prosodic prominence in nested foci. *Language* 82(1): 131-150.

Hulsey, S. & Sauerland, U. (2006). Sorting out relative clauses. *Natural Language Semantics* 14: 111-137.

Koch, K. (2006). Nominal modification in N̓e?kepmxcin (Thompson River Salish). In *MIT Working Papers on endangered and less familiar languages: Salishan volume*, eds. Shannon T. Bischoff, Lynnika Butler, Peter Norquest, and Daniel Siddiqi, 127-158. Boston: MIT.

Koch, K. (2008). *Intonation and focus in N̓e?kepmxcin (Thompson River Salish)*. Doctoral dissertation, University of British Columbia.

Koch, K. (2008b). Some issues in the structure and interpretation of clefts in N̓e?kepmxcin (Thompson River Salish). In *Papers for the 43rd ICSNL*, eds. Christiana Christodolou and John Lyon, 97-120. Vancouver: UBC Working Papers in Linguistics.

Koch, K. (2011). Watering the garden and stepping on snakes: an animated story and association with focus in Nɬeʔkepmxcin (Thompson River Salish). In *Papers for the 46th ICSNL*, ed. John Lyon, 49 pages. Vancouver: UBC Working Papers in Linguistics.

Koch, K. (to appear). Revisiting translation effects in an oral language: Emphatic topics in Salish. In *Multilingual discourse production: synchronic and diachronic perspectives. Series: Hamburg studies on multilingualism*, eds. Svenja Kranich, Viktor Becher, Steffen Höder and Juliane House. Amsterdam & Philadelphia: John Benjamins.

Koch, K. & Zimmermann, M. (2010). Focus sensitive operators in Nɬeʔkepmxcin (Thompson River Salish). In *Proceedings of Sinn und Bedeutung*, eds. Martin Prinzhorn, Viola Schmitt and Sarah Zobel, 237-255. Vienna: Universität Wien Institut für Sprachwissenschaft.

Krifka, M. 2006. Association with focus phrases. In *The Architecture of Focus*, eds. Valeria Molnar and Susanne Winkler, 105-136. Berlin: Mouton.

Kroeber, P. (1997). Relativization in Thompson Salish. *Anthropological Linguistics* 39(3): 376–422.

Kroeber, P. (1999). *The Salish language family: reconstructing syntax.* Lincoln: University of Nebraska Press.

Liversedge, S., Paterson, K. & Clayes, E. (2002). The influence of 'only' on syntactic processing of 'long' reduced relative clause sentences. *Quarterly Journal of Experimental Psychology* 55(1): 225-240.

Mithun, Marianne. (1987). Is basic word order universal? In *Coherence and grounding in discourse*, ed. Russel Tomlin, 281-328. Amsterdam: John Benjamins.

Ni, W., Crain, S. & Shankweiler, D. (1996). Sidestepping garden paths: the contribution of syntax, semantics and plausibility in resolving ambiguities. *Language and Cognitive Processes* 11: 283–334.

Rochemont, M. (1986). *Focus in generative grammar.* Amsterdam: Benjamins.

Rooth, M. (1992). A theory of focus interpretation. *Natural Language Semantics* 1: 75-116.

Rooth, M. (1996). Focus. In *The handbook of contemporary semantic theory*, ed. Shalom Lappin, 271–297. London: Blackwell.

Ross, J.R. (1973). The same side filter. In *Papers from the 9th Annual Meeting of the Chicago Linguistics Society*, eds. Claudia Corum, T. Cedric Smith-Stark, and Ann Weiser, 549-559. Chicago: University of Chicago.

Sauerland, U. (2004). The interpretation of traces. *Natural Language Semantics* 12: 63–127.

Sedivy, J., Tanenhaus, M., Chambers, C. & Carlson, G. (1999). Achieving incremental semantic interpretation through contextual representation. *Cognition* 71: 109-147.

Thompson, L. & Thompson, M. (1992). *The Thompson language*. Missoula: University of Montana Occasional Papers in Linguistics 8.

Thompson, L. & Thompson, M. (1996). *Thompson River Salish dictionary*. Missoula: University of Montana Occasional Papers in Linguistics 12.

Truckenbrodt, H. (1995). *Phonological phrases: their relation to syntax, focus and prominence.* Doctoral dissertation, MIT.

von Stechow, A. (1990). Focusing and background operators. In *Discourse Particles*, ed. Werner Abraham, 37-84. Amsterdam: John Benjamins.

Weinert, R. (2004). Relative clauses in spoken English and German - their structure and function. *Linguistische Berichte* 197: 3-51.

Wiltschko, M. (2011). What does it take to host a (restrictive) relative clause? In *Working Papers of the Linguistics Circle of the University of Victoria 21(2)*, ed. Matt Richards. Victoria: WPLC. 45 pages.

Oblique Marked Relatives in Southern Interior Salish: Historical Implications for a Movement Analysis

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This paper investigates the distribution of the oblique marker *t* in relative clauses in the Upper Nicola dialect of Okanagan and Nxaʔamxcín (Willett, 2003), specifically in light of relative clauses in the Northern Interior Salish languages St'át'imcets (Davis, 2004, 2010) and Nɬəʔkepmxcín (Kroeber, 1997, 1999; Koch, 2004, 2006) which show evidence for movement of a clause-internal DP to the left periphery of CP. Data from Southern Interior Salish languages also show evidence for clause-internal movement, but the distribution of the oblique marker suggests that the landing site of the moved DP is in a higher position. This distinction between Northern and Southern Interior Salish may be construed as evidence for a historical split with regards to relative clause formation, and may have occurred at roughly the same time as the inversion of prepositions to a DP-internal position in the Southern Interior.

1 Introduction

Okanagan, Nxaʔamxcín (a.k.a. Moses-Columbian), Coeur d'Alene and the dialect continuum known as Spokane-Kalispel-Flathead comprise the Southern Interior sub-branch of the Salish language family. Okanagan is spoken in South-central British Columbia and North-central Washington. It is critically endangered, being spoken by only about 400 speakers. The Upper Nicola dialect of Okanagan is centered around the Douglas Lake (Spáx̌mən) and Quilchena (Nɬq̓íɬməlx) reserves, close to the city of Merritt, B.C., by perhaps as few as 12 speakers. Nxaʔamxcín is spoken in central Washington, primarily in Colville territory, by fewer than forty speakers (Willett, 2003, 3).

Southern Interior Salish languages have syntactic structures which may be described as relative clauses, in the sense that these clauses contribute information which further specifies the referent of a head noun (Kroeber, 1999). A case may

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also be made for a more formal definition, where a relative clause consists of a "syntactically complex modifier involving abstraction over an internal position of the clause (the relativization site) and connected to some constituent it modifies (the relative "head")" (Bianchi, 2002). Example (1) shows a typical Okanagan relative in brackets. The determiner *iʔ* and the oblique marker *t* introduce the clausal remnant *x̌ʷílstəm* t_1 "he/she was abandoned by x". This clause modifies an NP head *sqilxʷ* "people".[1,2]

(1) ixíɁ, uɬ **iʔ** **sqilxʷ**$_2$ [[**iʔ** **t** **[**$\oslash_{NP_2}$**]**$_{DP_1}$**]** **x̌ʷílstəm**
DEM CONJ DET people DET OBL abandon-CAUS-PASS
t_{1CP}] kʷukʷ cútləx "way' cakʷ ʔawsʕác'ntəm
gap EVID say-3PL.ABS yes DEON go-look-DIR-1PL.ERG
mat stim' iʔ cáwts."
EVID what DET doings-3SG.POSS
Meanwhile, **the people who abandoned him**, they said "We should go see what he's doing." (from Upper Nicola legend)

It has been well-established that relative clauses in the Northern Interior Salish languages Nɬəʔkepmxcín (a.k.a. Thompson) (Kroeber, 1997, 1999; Koch, 2006) and St'át'imcets (a.k.a. Lillooet) (Davis, 2004, 2010) are formed by movement of a clause-internal DP to the left-periphery of the relative clause CP, but besides Kroeber (1999), and a chapter in Willett (2003) on relative clauses in Nxaʔamxcín, little work has been done on relativization strategies of the Southern Interior. As illustrated by the bracketing in (1), I claim that clause internal movement also occurs in the formation of Okanagan relatives.[3]

This paper investigates several points pertaining to relativization in Okana-

[1]Similar to other branches of the family, Southern Interior Salish languages lack a dedicated relative pronoun or complementizer.

[2]The determiner-oblique marker sequence *iʔ t*, in combination with the "passive" suffix *-m* indicate that it is the agent of the passive sentence (i.e. *sqilxʷ* "people") which has been extracted. Since main-clause passive agent nominals are introduced by *iʔ t* and occur post-predicatively, the DP *iʔ t sqilxʷ* in (1) must have raised from a post-predicative position at some point during the derivation.

See Koch (2006) and Davis (2010) for a discussion of evidence pertaining to whether a matching or raising analysis is correct for Nɬəʔkepmxcín and St'át'imcets, respectively. Davis, for instance, concludes that some types of relatives in St'át'imcets require a matching analysis (Hulsey and Sauerland, 2006), however there is no evidence for raising in any St'át'imcets relatives. For the purposes of this paper, I assume that Okanagan patterns similarly to St'át'imcets, and therefore adopt the matching analysis as the null hypothesis. The subscript '2' indicates that the external head noun is co-referent with the RC-internal one, which undergoes deletion through identity.

[3]Okanagan relatives, like St'át'imcets relatives (Davis, 2010), show evidence for an A' dependency within the relative clause (Chomsky, 1977): resumptive pronouns are not permitted clause-internally, and long range extraction is possible, subject to strong island effects. For reasons of space, I do not include these data.

gan and the Southern Interior. First, I show that the formation of at least some relative clauses in Okanagan (and at least one other Southern Interior language, Nxaʔamxcín) involves movement of a clause-internal DP to the left-periphery of the relative clause. Secondly, I show that certain classes of oblique-marked relative clauses in Okanagan and Nxaʔamxcín, which at first seem to defy a movement analysis, are explained if the moved DP lands in a higher position than the Spec CP position argued for by Davis (2010) for St'át'imcets. I claim that this difference represents a more general split between relative clause formation in the Northern and Southern Interior languages. Finally, I suggest that diachronically, there is a causal relation between the DP-internal "prepositions" characteristic of languages in the Southern Interior, and the structure of relative clauses in these languages. More specifically, inversion of prepositions to a DP-internal position may have conditioned a change in relative clause formation in the Southern Interior.

The paper is organized as follows: Section 2 discusses some basic facts about Okanagan DP structure, and introduces relative clauses. Section 3 summarizes the theory of relative clause formation by movement, and presents data showing that certain classes of relative clauses in Okanagan support a movement analysis for this language. Section 4 presents Okanagan data involving certain types of oblique-marked relative clauses which are problematic for the movement analysis, and then discusses similar data in other Interior Salish languages, which prove illuminating to the problem at hand. Section 5 presents my solution to this problem. Section 6 discusses further historical implications of this analysis. Section 7 raises further questions, and section 8 concludes.

2 Introducing Okanagan relatives

2.1 Okanagan DP Structure

Okanagan, like other Salish languages, is verb-initial, however in transitive sentences involving two overt nominal arguments, subject-verb-object (SVO) is an unmarked word order. The language exhibits a tight correlation between predicate transitivity and argument marking. While subject nominals will always be introduced by a determiner *iʔ*, object nominals are only introduced by *iʔ* if the predicate is formally transitive, as in (2a) (Lyon, 2011). If the predicate is formally intransitive, an object nominal will always be introduced by the oblique marker, as in (2b).[4]

[4]By formally transitive, I refer to predicates which are affixed by any one of several transitivizers: *-nt-* 'directive', *-st-* 'causative', *-cit-* 'transitive applicative', *-ɬt-* 'ditransitive applicative'. Such predicates take ergative subject morphology. For the purposes of this paper, 'formally transitive' also subsumes transitive nominalized possessive predicates, i.e. those predicates with possessor subjects,

(2) a. tkíc-ən **[iʔ** sqəltmíx$^{w}{}_{DP}$] ʕapnáʔ sx̌əlx̌ʕált.
meet-(DIR)-1SG.ERG DET man now today
I met a man today.

b. kn tkíc-əm **[t** sqəltmíx$^{w}{}_{KP}$] ʕapnáʔ sx̌əlx̌ʕált.
1SG.ABS meet-MID OBL man now today
I met a man today.

Intransitive objects like (2b) are not DPs, since the oblique marker *t* is not a determiner (Lyon, 2011). In specific grammatical environments, the determiner *iʔ* and the oblique marker *t* may co-occur, as when marking an instrument (3a). The determiner *iʔ* also co-occurs with the locative markers *ḵ̓l* 'to/towards', *l* 'at/on/in', and *tl* 'from/than' (3b).[5] Together, these yield a structure resembling an English prepositional phrase except that the 'preposition' occurs internal to the DP (Kroeber, 1999, 71).[6]

(3) a. t̓ʕapəntís **[iʔ** [**t** swlwlmínk$_{KP}$]$_{DP}$].
shoot-DIR-3SG.ERG DET OBL gun
He shot it with a gun.

b. John npúsəs **[iʔ** [**l** ɬkap$_{KP}$]$_{DP}$].
John cook-(DIR)-3SG.ERG DET LOC pot
John cooked it in the pot.

Because locative markers and the oblique marker are in complementary distribution, it is reasonable to assume that they occur in the same syntactic position. I label both oblique-marked nominals (3a) as well as nominals which form a constituent with a locative marker (3b) as KPs, since the oblique marker and the set of locative markers both carry case information, and designate a nominal as standing in an oblique grammatical relation to the main predicate.[7,8] Evidence that the

which may take a nominal DP object. By formally intransitive, I refer to predicates which are affixed by one of several intransitivizers: *-əm* 'middle', *-(aʔ)x* 'intransitive'. Such predicates take absolutive subject morphology, and oblique-marked objects, never full DPs.

[5]See Mattina (1973, 117) for further description of these particles.

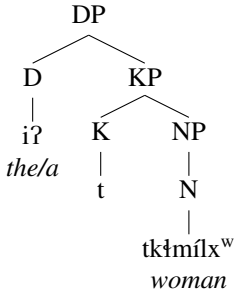
[6]This DET-PREP ordering is a general feature of all languages in Southern Interior Salish, and contrasts with the PREP-DET ordering exhibited by the rest of the family. Kroeber (1999, 72) hypothesizes that "this peculiarity is readily explained if articles in these languages derive diachronically from demonstrative particles outside DP, or loosely adjoined to it, rather than from articles occupying the determiner slot within DP." I suggest an alternative analysis which is somewhat at odds with Kroeber's.

[7]The oblique marker signals that a nominal is a *core oblique*, and a locative marker signals that a nominal is a *non-core-oblique*, or locative adjunct in other words (Kroeber, 1999, 42-44).

[8]Bittner and Hale (1996) posit KP as the nominal equivalent of CP in the verbal domain. They

oblique marker and locative markers project their own syntactic category comes from conjunction (Lyon, in prep.), and NP-deletion in relative clause formation. I assume the following basic DP structure for Okanagan:

(4)



The distribution of the determiner *iʔ* and the oblique marker and locative markers across various grammatical categories is shown in the table below.

	D	K	N
Subjects	iʔ	⊘	tkɬmílxʷ
Transitive objects	iʔ	⊘	tkɬmílxʷ
Oblique objects	⊘	t	tkɬmílxʷ
Applicative (*-xt-*) Themes	⊘	t	tkɬmílxʷ
Passive agent obliques	(iʔ)	t	tkɬmílxʷ
Instrumental obliques	(iʔ)	t	tkɬmílxʷ
Locative adjuncts	(iʔ)	{ƛ̓l, l, tl}	tkɬmílxʷ

Table 1. *Distribution of Nominal-Introducing Particles in Okanagan*

This distribution provides important evidence for an analysis in which relative clauses in Okanagan are formed by clause-internal movement of a DP.

assume that K selects a DP for an argument, rather than D selecting a KP which is what I assume for Okanagan. My analysis is non-standard, since the relation between the selecting predicate head and the case-marked nominal is non-local (i.e. there is an intervening D-head). But despite being non-standard, some version of my analysis may be necessary, since it is undesirable to assume for (4) that *iʔ* is a K, or that *t* is a D. There are 2 main points against this: First, such an analysis must analyze DP-internal locative markers as determiners, which ignores the fact that historically they were never determiners. Second, *iʔ* is semantically speaking a context-sensitive domain restrictor (Lyon, 2011), a role argued by Gillon (2009) to be universally associated with the D position. Also, under the assumption that D always selects for a KP, there must be a null case-marker for subject and transitive object DPs.

2.2 Relative Clauses

Relative clauses may modify an NP directly dominated by either a DP (5), or a KP (6). Additionally, the modifying clause may either precede or follow the head, as may be seen by comparing (5a) with (5b), and (6a) with (6b).

(5) a. way̓ c̓aʔ-nt-ís **iʔ** sqəltmíx^{w} **iʔ** wik-s.
yes punch-DIR-3SG.ERG DET man DET see-(DIR)-3SG.ERG
He hit the man he saw.

b. way̓ c̓aʔ-nt-ís **iʔ** wik-s **iʔ** sqəltmíx^{w}.
yes punch-DIR-3SG.ERG DET see-(DIR)-3SG.ERG DET man
He hit the man he saw.

(6) a. John k̓^{w}ul̓-əm **t** yamx̌^{w}aʔ **t**
John make-MID OBL basket OBL
kɬ-s-n-q̓^{w}iɬ-tən-s.
UNR.POSS-NOM-n-pack-INSTR-3SG.POSS
John made the basket he was going to carry.

b. John k̓^{w}ul̓-əm **t** kɬ-s-n-q̓^{w}iɬ-tən-s **t**
John make-MID OBL UNR.POSS-NOM-n-pack-INSTR-3SG.POSS OBL
yamx̌^{w}aʔ.
basket
John made the basket he was going to carry.

I refer to head-initial relatives like (5a) and (6a) as *post-nominal*, and head-final relatives like (5b) and (6b) as *pre-posed*, following Davis (2010). Okanagan relatives must have particles (i.e. determiners and/or case markers) introducing both

the head and the clausal remnant.[9]

Any grammatical role may be relativized in Okanagan. In addition to the relativized transitive and intransitive objects seen above in (5) and (6), subjects may be relativized (7) as well as themes of ditransitives (9):

(7) **iʔ** sqəltmíx^{w} **iʔ** q̓əy̓-nt-ís iʔ q̓əy̓min k^{w}u
DET man DET write-DIR-3SG.ERG DET book 1SG.GEN
x^{w}ic̓-xt-s ənts ʔa t i-kɬ-q̓əy̓min.
give-DITR-3SG.ERG 1SG.INDEP OBL 1SG.POSS-UNR.POSS-book
The man who wrote the book gave me a book.

(8) k^{w}in-t **iʔ** qáqx^{w}əlx **iʔ** x^{w}ic̓-xt-m-n.
take-DIR DET fish DET give-DITR-2SG.ACC-1SG.ERG
Take the fish that I'm giving you.

Unlike many other Salish languages, Okanagan relative clauses do not exhibit any special inflectional pattern. In other words, pronominal morphology found on relative clauses may also be found in main clauses (Kroeber, 1999).[10] (9a) shows a pre-posed object relative inflected with an ergative subject, and (9b) shows the

[9]This effectively excludes *pre-nominal* (DET [CLAUSE NP]) and *post-posed* (DET [NP CLAUSE]) relatives as possibilities in Okanagan, although they are possible in other Salish languages, as shown in the following chart:

	Pre-nominal	Post-posed	Post-nominal	Pre-posed
St'át'imcets	✓	✓	✓	x
Nɬəʔkepmxcín	x	x	✓	✓
Okanagan	x	x	✓	✓
Nxaʔamxcín	✓	✓	(✓)	x

In Nxaʔamxcín, post-nominal relatives are possible (Mattina, 2006, 124), but the oblique marker is becoming 'optional' here (Willett, 2003, 109). I discuss my analysis of Nxaʔamxcín pre-nominal relatives in section 5.

[10]There are nevertheless differences in the distribution of main versus subordinate clause inflectional patterns. It is difficult to extract an intransitive oblique object from a predicate inflected with the *-m* or *(-míxaʔ)x* intransitive suffixes, although apparently possible with a third person subject:

(i) kn ǩmínk-əm t siwɬk^{w} t ks-síwst-x i-sl̓áǩt.
1SG.ABS want-MID OBL water OBL FUT-drink-INTR 1SG.POSS-friend
I want some water for my friend to drink.

On the other side of the coin, nominalized possessor predicates, such as *i-sc-wík* "my seeing"/"I saw" in (9b), are generally not used as main-clause predicates, although nominalized future forms inflected with a middle suffix, such as *i-ks-púlstəm* "I'm going to beat him" are often found in non-embedded contexts.

corresponding nominalized object relative with a possessor subject.[11,12]

(9) a. t̓ʕáp-nt-ín **iʔ** wík-ən **iʔ** skəkʕákaʔ.
shoot-DIR-1SG.ERG DET see-(DIR)-1SG.ERG DET bird
I shot the bird that I've seen.

b. t̓ʕáp-nt-ín **(iʔ)** i-sc-wík **iʔ** skəkʕákaʔ.
shoot-DIR-1SG.ERG (DET) 1SG.POSS-PERF-see DET bird
I shot the bird that I've seen.

When transitive subjects are relativized, speakers often prefer to passivize the predicate. In (10), the clausal remnant is inflected as passive by the suffix *-m*, and is introduced by the sequence *iʔ t*, which together indicate that the passive agent has been extracted:[13]

(10) sc-x̓aʔx̓aʔ-ám-s **iʔ** səxʷm̓aʔm̓ayaʔm-s **iʔ** **t**
IMPF-look.for-MID-3SG.POSS DET teacher-3SG.POSS DET OBL
knxít-(t)-m iʔ l sənq̓əy̓míntən.
help-DIR-PASS DET LOC school
He's looking for the teacher that helped him at school.

Headless relatives are also common in Okanagan (11). I assume that these are a special type of post-nominal relative, where the head noun, and its selecting determiner, are both null.[14]

[11]The exact semantic difference between (9a) and (9b), if there actually is one, remains unclear. Speakers indicate that nominalized forms like (9b) are past-tense completive, while ergative forms like (9a) are present-tense completive, but my research suggests that there is no clear demarcation between the two, and that both can be uttered felicitously within an identical discourse situation. Nominalized relatives may have less clausal structure than relatives inflected with ergative subjects (Thompson, 2011), but since nominalized clauses can function as main predicates in Okanagan and select for DP arguments, the case can also be made that extraction of such an argument from a nominalized clause involves clause-internal movement. On that note, it is not yet established whether there is any difference between predicate and clausal nominalization in subordinate clause contexts, since there are no pre-predicative auxiliaries in Okanagan to which a nominalizer might attach, thereby providing evidence for a distinction betwen predicate and clausal nominalization.

[12]The determiner *iʔ* regularly elides before 1st person possessive prefix *in-* and 2nd person possessive prefix *an-*, as in (9b), and lowers to *aʔ* before customary prefix *(a)c-*, as in (11b).

[13]See example (1) for a similar case.

[14]Davis (2010) argues against a similar analysis for St'át'imcets, instead claiming that relatives in this language are all derived from a common pre-nominal structure. His analysis will not work for Okanagan, however, since Okanagan (unlike St'át'imcets) has pre-posed relatives.

(11) a. q̓əy̓ntíxʷ iʔ qʷəlqʷílstmən.
write-DIR-2SG.ERG DET speak-CAUS-2SG.ABS-1SG.ERG
Write down what I'm telling you.

b. kaʔkícən (iʔ) acsl̓místən.
find-(DIR)-1SG.ERG (DET) CUST-lose-CAUS-1SG.ERG
I found the one I was looking for.

Demonstratives appear to function as relative clause heads (12), but since demonstratives often adjoin to a constituent DP (Lyon, 2010), (12) may also be analyzed as a headless relative if we assume that the adjoined DP is null in these cases.

(12) wík-ən ixíʔ iʔ ks-knxít-m-s.
see-(DIR)-1SG.ERG DEM DET FUT-help-DIR-2SG.OBJ-3SG.ERG
I saw the one who will help you.

I now move on to a more technical discussion of the syntactic processes involved in relative clause formation in Okanagan.

3 Relative clause formation by movement

As first noted by (Kroeber, 1997, 396) for Nłəʔkepmxcín, locative relative clauses seem to involve clause internal movement of a DP to the left periphery of a relative clause. Kroeber notes that in examples like (13), "...the preposition codes the relation of gap to relative clause predicate, not the relation of the whole relative clause to the matrix predicate."

(13) (w)ʔéx kn xʷíʔ-m te npúytn$_2$ [[**n-e** [$\oslash_{NP_2}$]$_{PP_1}$]
PROG 1SG look.for-MID OBL.DET bed in-DET
xʷúy̓ wn ʕʷóy̓t t_{1CP}]
FUT 1SG.CONJ sleep
I'm looking for a bed where I'm gonna' sleep. (Koch, 2006, 132)

In other words, because the preposition *n* "in" in (13) helps to specify the location of the sleeping event, and not the looking event, the preposition may plausibly be analyzed as having moved from a base position following the relative clause. Davis (2004) and Koch (2006) have shown for St'át'imcets and Nłəʔkepmxcín respectively, that the determiner also moves, or rather, the DP "pied-pipes" the preposition to a clause-initial position. This is illustrated by the bracketing in (13).[15]

[15]Since Nłəʔkepmxcín determiners vary with regards to their spatio-temporal properties, Koch (2006) is able to show that the determiner introducing the relative clause shows the spatio-temporal

Recall that for Okanagan, the oblique marker *t* and locative markers *k̓l, l* and *tl* may co-occur with *iʔ*. These particle sequences help provide evidence for clause-internal movement. In main clauses, the combination of *iʔ* and *t* introduces instruments and passive agents, as in (14), and the combination of *iʔ* and a locative particle designates a DP as a locative adjunct, as in (15) *iʔ tl sqəltmíxʷ* "from the man".

(14) a. t̓ʕap-nt-ís [**iʔ** [**t** swlwlmínk$_{KP}$]$_{DP}$].
shoot-DIR-3SG.ERG DET OBL gun
He shot it with a gun.

b. Mike c̓úm̓qs-nt-m [**iʔ** [**t** tkɬmílxʷ$_{KP}$]$_{DP}$].
Mike kiss-DIR-PASS DET OBL woman
Mike was kissed by the woman.

(15) ac-ylt-mí-st-ləx [**iʔ** [**tl** sqəltmíxʷ$_{KP}$]$_{DP}$].
CUST-run.away-APPL-CAUS-3PL.ERG DET LOC man
They're running away from the man.

In support of a movement analysis for Okanagan relatives, consider that when instruments and passive agents like those in (14) are relativized, the relative clause is introduced by both *iʔ* and *t*, as in (16):

(16) a. kʷu ɬiʔq̓ʷ-m-ɬt iʔ nik̓-mn$_2$ [[**iʔ** **t** [$\oslash_{NP_2}$]$_{DP_1}$]
1SG.GEN show-DITR DET knife DET OBL
nik̓-nt-xʷ t_{1CP}].
cut-DIR-2SG.ERG
Show me the knife that you cut it with.

b. Mike wiks iʔ tkɬmílxʷ$_2$ [[**iʔ** **t** [$\oslash_{NP_2}$]$_{DP_1}$]
Mike see-(DIR)-3SG.ERG DET woman DET OBL
c̓úm̓qs-nt-m t_{1CP}].
kiss-DIR-PASS
Mike saw the woman he was kissed by.

Note that *iʔ* and *t* normally only co-occur when introducing a passive agent

properties of the relative clause predicate, rather than the main clause predicate, confirming that movement also occurs in relatives which do not involve locative marking. For Okanagan, it is not possible to use different determiners as a diagnostic for movement, since there is only one determiner involved in relativization, *iʔ*. Nevertheless, the oblique marker *t* as well as the other locative markers, help to confirm that movement has occurred.

or instrument, or before clauses from which these grammatical roles have been extracted. In extraction contexts involving passive patients, for example, *iʔ t* may not introduce the relative clause, only *iʔ*. (17) shows an example of an extracted patient, where the clausal remnant is introduced by the determiner *iʔ*, and an in-situ clause-internal agent is introduced by *iʔ t*.

(17) John səcx̌̓aʔx̌̓aʔáms **iʔ** tkɬmilxʷ iʔ **(*t)**
John IMPF-look for-MID-3SG.POSS DET woman DET (*OBL)
knxítəm iʔ t sqəltmíxʷ.
help-(DIR)-PASS DET OBL man
John is looking for the woman who was helped by the man.

Given that the distribution of the sequence *iʔ t* is limited to the same grammatical subset in both extraction and non-extraction contexts, the sequence *iʔ t* in (16) constitutes evidence for clause-internal movement.

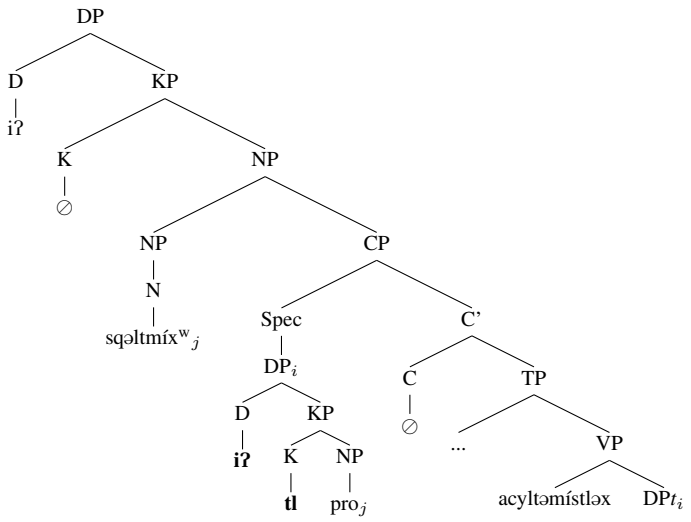
Similarly, when a locative adjunct is extracted in Okanagan, the relative clause is introduced by a determiner plus locative marker sequence, thus furnishing evidence parallel to Nɬəʔkepmxcín (13) that clause-internal movement has indeed occurred. Compare (15) and (18a), in particular.

(18) a. wik-ən iʔ sqəltmíxʷ$_2$ [[**iʔ** **tl** [$\oslash_{NP_2}$]$_{DP_1}$]
see-(DIR)-1SG.ERG DET man DET LOC
ac-ylt-mí-st-ləx t_{1CP}].
CUST-run.away-APPL-CAUS-3PL.ERG
I see the man that they're running away from.

b. uc c-my-st-íxʷ iʔ sqəltmíxʷ **iʔ** **kl̓**
YNQ CUST-know-CAUS-2SG.ERG DET man DET LOC
tw-mí-st-əm-ən iʔ lasmíst.
sell-APPL-CAUS-APPL(?)-1SG.ERG DET shirt
Do you know the man that I sold the shirt to?

Following Davis (2010) and Koch (2006), it seems clear that for Okanagan (16) and (18) at least, a DP internal to the relative clause has raised to the left periphery of the relative clause CP. The noun in the moved DP then plausibly undergoes deletion through identity with the clause exterior head NP. The following structure is thus a plausible representation of the relative clause in (18a):

(19)



Assuming that *all* relative clauses in Okanagan are similarly formed, the structure in (19) implies that the sequence of particles introducing the clausal remnant should *always* code the relation of the gap to the relative clause predicate. This holds true in some cases. For example, consider that subject and transitive object extractions in Okanagan, e.g. (5) and (7), are characterized by having the determiner *iʔ* introduce both the head and the clausal remnant. Since transitive predicates always select for *iʔ* DP objects in main clause contexts (20a), the prediction is that when an object is extracted, the clausal remnant will be introduced by only a determiner *iʔ*. This prediction is upheld (20b).[16]

(20) a. wik-s iʔ sqəltmíxʷ
see-(DIR)-3SG.ERG man
He saw the man.

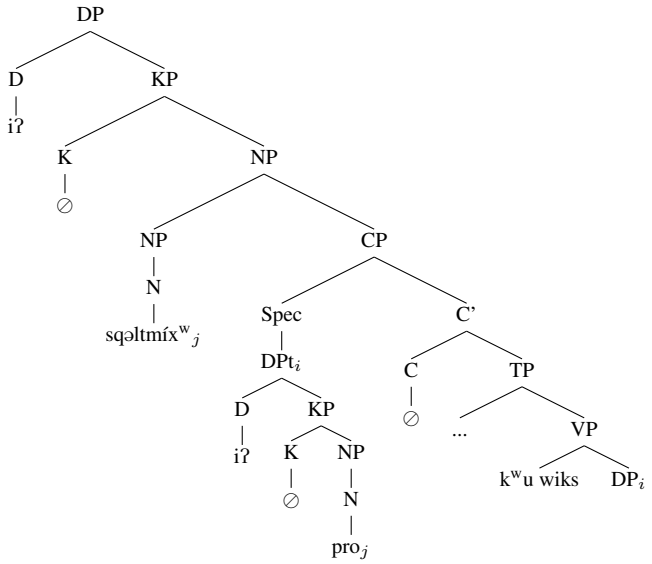
b. way̓ c̓aʔ-nt-ís iʔ sqəltmíxʷ **iʔ** wik-s.
yes punch-DIR-3SG.ERG DET man DET see-(DIR)-3SG.ERG
He hit the man he saw.

As a working hypothesis then, I assume that *all* Okanagan relatives are formed by clause-internal movement. Relative clauses are canonically post-nominal, and pre-posed relatives are derived from post-nominals by an additional movement of the relative clause CP to a position preceding the DP containing the head, presum-

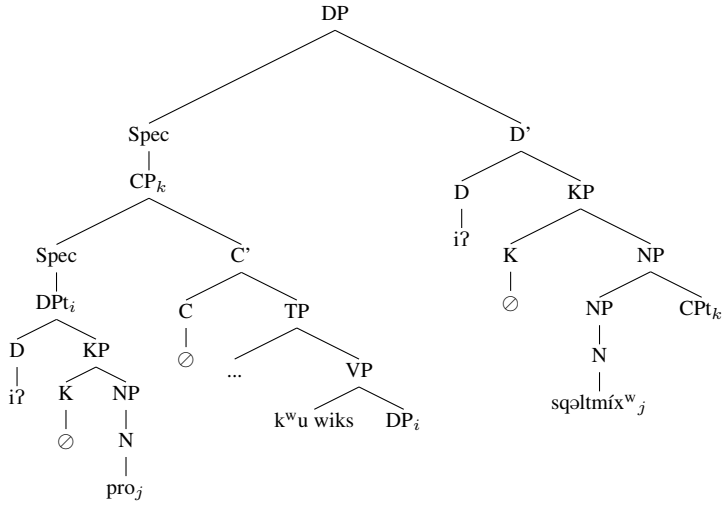
[16]But admittedly these constitute only weak support for movement, since as Koch (2006) notes for similar cases in Nɬəʔkepmxcín, the two determiners may simply be copies of one another.

ably Spec DP.[17] Compare the post-nominal relative clause *iʔ sqəltmíx*^{w} *iʔ k*^{w}*u wiks* "the man who saw me" (21a) with its equivalent pre-posed version *iʔ k*^{w}*u wiks iʔ sqəltmíx*^{w} (21b):

(21) a.



b.



Extending this movement account to all Okanagan relatives encounters several problems, however. First and foremost, the distribution of *t* before a clause

[17] Or possibly adjoined to DP. Pre-posed relatives in Okanagan are generally more marked than post-nominal forms, for reasons to be discussed.

does not always code the relation of the gap to the relative clause predicate.[18] The next section discusses these problematic data.

4 Extending the movement account

4.1 Problematic cases of oblique marking

Not all relative clauses in Okanagan conform so nicely to the movement account described in the previous section. Consider that relative clause predicates may be inflected with the future prefix *ks-*. In these cases, the clausal remnant is often introduced by both *iʔ* and *t*, but this sequence does *not* code the relation of the gap to the relative clause predicate. (22) shows that in main clause contexts, a future transitive predicate cannot select for an object introduced by *iʔ t*[19], yet in extraction contexts (23), the oblique marker *t* may co-occur with the determiner.[20]

(22) ks-yaʔ-yáʔxaʔ-səlx **iʔ** (***t**) pwmín
FUT-show-(DIR)-3PL.ERG DET (*OBL) drum
They will look at a drum.

(23) way̓ i-ks-k̓ʷul̓-əm **iʔ** pwmín **iʔ** **(t)**
yes 1SG.POSS-FUT-make-MID DET drum DET (OBL)
ks-yaʔ-yáʔxaʔ-səlx.
FUT-show-(DIR)-3PL.ERG
I will make a drum that they will look at.

(24-25) show that the same pattern surfaces with subjects. In main clause contexts, subjects of future-inflected transitives may not be introduced by the oblique marker *t*, only by *iʔ*, but (25a,b) confirms that in extraction contexts, the sequence *iʔ t* is possible.

[18]Other issues which require further investigation are: (i) Whether KP movement (rather than DP movement) occurs for cases where a relative clauses modifies a KP-contained head (6), or whether there may be a null determiner in the language; (ii) An explanation for the 'matching effect' displayed between the head-introducing and clause-introducing particles, a phenomenon which I touch on in the next section; (iii) Ditransitive theme extractions, which still do not follow from my extension of the movement account.

[19]Recall that for (22), an oblique marker is not possible, since 'the drum' is a grammatical object, and not an instrument or passive agent.

[20]From this point onwards, I highlight the oblique marker which introduces a relative clause in blue type, to help the reader distinguish between this occurence of *t*, and its other role as a nominal case marker.

(24) ks-knxít-m-s **iʔ** (***t**) sqəltmíx^{w}
FUT-help-(DIR)-2SG.ACC-3SG.ERG DET (*OBL) man
The man will help you.

(25) a. kn wikəm **t** sqəltmíx^{w} **(iʔ)** **t**
1SG.ABS see-MID OBL man DET OBL
ks-knxít-m-s.
FUT-help-(DIR)-2SG.OBJ-3SG.ERG
I saw a man who will help you.

b. wík-ən **iʔ** sqəltmíx^{w} **iʔ** **(t)**
see-(DIR)-1SG.ERG DET man DET OBL
ks-knxít-m-s.
FUT-help-(DIR)-2SG.ACC-1SG.ERG
I saw the man that will help you.

At this point, it is worthwhile to briefly discuss the apparent 'matching' relation which holds between the head-introducing and clause-introducing particles in (25a) and (25b). Notice that for (25b), the oblique marker *t* is optional, while for (25a), it is the determiner *iʔ* that is optional. This difference appears to be due to the transitivity of the main clause predicate. Recall that in Okanagan, formally transitive predicates like *wíkən* "I see s.t." in (25b) will always select a full DP as an object, while formally intransitive predicates like *wikəm* "to see" (25a) will always select for an oblique-marked KP as an object. This tight correlation between predicate transitivity and nominal marking drives the matching relation between the particle introducing the head noun and which particle *must* introduce the future-marked clausal remnant. The presence or absence of the optional particle in these cases seems to be a surface-level phenomena, there being no semantic difference between forms with and without the optional particle, and so it seems reasonable to assume that both particles are underlyingly present in these cases.[21]

[21]The fact that this 'optional' oblique marker *t* is only apparent in extractions from future-inflected predicates is interesting, especially since what I analyze as the equivalent particle in Nxaʔamxcín is not dependent on the tense/aspect properties of the clausal remnant. It is quite possible that this *t* has been borrowed by the Upper Nicola dialect from Nɬəʔkepmxcín, and that it occurs only before future *ks-* on analogy with the Nɬəʔkepmxcín *tk* and Secwepemctsín *tek* 'oblique+irrealis determiner'. In both Nɬəʔkepmxcín and Secwepemctsín, this sequence occurs before 'unrealized' or 'irrealis' intransitive objects, and in Nɬəʔkepmxcín at least, also before relative clause predicates with unrealized/irrealis heads. If this hypothesis is correct, the prediction is that this *t* will be absent from other Okanagan dialects not so heavily influenced by Nɬəʔkepmxcín.

This point also brings to mind the historical connection between the irrealis *k*-type determiners of the Northern Interior, and future *ks-* in Okanagan, and raises the question of whether the historical developments discussed in this paper might not be related to the absence of a *k* determiner in Okanagan,

But here we encounter a problem. Neither (25a) nor (25b) are consistent with the movement account, since in neither case does the sequence *iʔ t* code the relation of the gap to the clausal remnant. In other words, under the movement analysis, the prediction is that for both (25a) and (25b), *iʔ* must introduce the clausal remnant and *t* should be ungrammatical, since these are not instrument or passive agent extractions. If the oblique marker *t* did not undergo raising with a constituent clause-internal DP in these cases, then what is the function of *t* here, and where did it come from?

To begin to answer this question, it is important to note that Okanagan does show evidence that in certain cases, the oblique marker *cannot* have moved as a constituent with a post-clausal DP. Examples (26a,b) below are the structural equivalents to examples (25a,b) above, the difference being that the pronominal object of the clausal remnant is realized as a pro-clitic, rather than a suffix. In these cases, *t* occurs *between* the object clitic and the remnant predicate:[22]

(26) a. kn ks-x̌̓aʔx̌̓aʔ-míxaʔx **t** təṫwit$_2$ [[**(iʔ)** [$\oslash_{NP_2}$]$_{DP_1}$]
1SG.ABS FUT-look.for-INCEPT OBL boy (DET)
k^{w}u **t** ks-knxít-s t_1 ɬaʔ x̌lap$_{CP}$].
1SG.GEN OBL FUT-help-(DIR)-3SG.ERG COMP tomorrow
I'm gonna look for a boy to help me tomorrow.

b. ʔaws-x̌̓aʔx̌̓aʔ-nt-ín **iʔ** təṫwit$_2$ [[**iʔ** [$\oslash_{NP_2}$]$_{DP_1}$] k^{w}u
go-look.for-DIR-1SG.ERG DET boy DET 1SG.GEN
(t) ks-knxít-s t_1 ɬaʔ x̌lap$_{CP}$].
(OBL) FUT-help-(DIR)-3SG.ERG COMP tomorrow
I went looking and I found the boy who's gonna help me tomorrow.

Since the 1st person object clitic *k^{w}u* in (26a,b) is certainly not a constituent with the moved DP, it can safely be concluded that the oblique marker *t*, which follows the clitic in this case, is also not a constituent with the moved DP, ergo it does not undergo movement. Concerning the position of *k^{w}u*, I assume a morpho-phonological analysis of pronominal pro-clitics, whereby they attach to the left-most element of a clause. Since *t* does not move in (26a,b), but rather delimits the left-periphery of the clause, a pronominal pro-clitic will attach to the left of *t*.[23]

or its probable reanalysis as an aspectual prefix.

[22] See A. Mattina (1993) for a discussion of Okanagan pronominal paradigms.

[23] This predicts that a DP object, whose position is *not* morpho-phonologically determined, but syntactically determined, may not substitute for the object proclitic in such cases. While overt clause-internal nominal DP objects of subject-extracted relatives must occur after the clausal remnant, I have not yet tried to substitute an object DP for the proclitic in the cases shown above.

Note that pronominal pro-clitics also apparently attach to *t* in cleft contexts (27a), and regularly precede the complementizer *ɬaʔ* in contexts involving clausal subordination (27b):

(27) a. anwíʔ kʷ t sqəltmíxʷ iʔ kʷ ylmíxʷəm.
2SG.INDEP 2SG.ABS OBL man DET 2SG.ABS chief
'You're the man who is the chief.'

b. cakʷ x̌ast kʷ ɬaʔ kaʔkíc-əm t siwɬkʷ.
DEON good 2SG.ABS COMP find-MID OBL water
'It'd be good if you go find some water.'

The implication from data like (26) is that when oblique *t* precedes a relative clause, it does not necessarily code the relation of the gap to the clausal remnant, since it does not necessarily undergo movement. In other words, when a sequence *iʔ t* precedes a relative clause, *t* is either a case marker which moves as a constituent with a clause-internal DP (i.e. in instrument and passive agent extractions), or *t* is something else (i.e. in argument extractions from future-marked predicates). There is a syntactic difference between these two different types of oblique marking.

I claim that the *t* found in data like (23), (25), and (26) is a remnant of an earlier relativization strategy in Okanagan, whereby *t* introduced all relative clauses. This claim is supported from data in neighboring Salish languages. Consider that in the Northern Interior Salish languages of Nɬəʔkepmxcín (Koch, 2006) and Secwepemctsín (Gardiner, 1993), non-locative clausal remnants are introduced by the oblique marker *t(e)*, regardless of the grammatical status of the moved constituent. The Southern Interior language Nxaʔamxcín also exhibits data showing that its oblique marker *t* cannot have moved together with a clause-internal DP. For these languages, as with Okanagan, only specific grammatical roles may be marked as oblique, and so assuming that all Interior Salish languages form relative clauses by a movement of a clause-internal DP to the left periphery of the clause, the relatively unrestricted occurrence of the oblique marker before relative clauses in these languages may be construed as evidence that it does not necessarily move with the clause-internal DP. In addition, an interesting and relevant difference emerges between Northern and Southern Interior Salish languages with regards to the linear position of the oblique marker in these cases, which in turn affects the mechanics of the movement analysis. It is to these languages that I now turn.

4.2 Evidence from Northern Interior Salish: Nłəʔkepmxcín and Secwepemctsín

For Nłəʔkepmxcín, spoken to the north and west of Okanagan country, oblique markers nearly always introduce relative clauses.[24,25] Similar to the facts in Okanagan, Nłəʔkepmxcín oblique *t* introduces intransitive objects and ditransitive themes, and not transitive objects in main clause contexts. It does occur before relative clauses, however, even in cases where a transitive object has been extracted (28a).

(28) a. (w)ʔéx xeʔ cu-t-⊘-éne e zéẁtn **t-e**
PROG DEM fix-TR-3SG.OBJ-1SG.ERG DET cup OBL-DET
máʕ̓-t-st-⊘-ne.
break-IM-CAUS-3SG.OBJ-1SG.ERG
I am fixing the cup that I broke. (Koch, 2006, 141)

b. ... e heʔuseʔ **t-k** xwuy' n-s-łaʔx̌ans.
... DET egg OBL-IRR FUT 1SG.POSS-NOM-eat(INTRANS)
(I boiled) an egg that I'm going to eat. (Koch, p.c.)

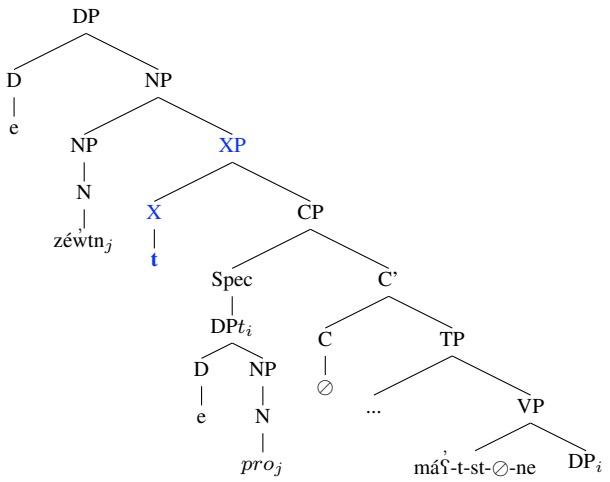
Since the relative clause predicates *máʕ̓tstne* "I broke x" in (28a) is formally transitive, the oblique preposition *t* cannot have raised with the determiner *e* from a clause-internal position.[26] As Koch (2006, 133) notes, "there must be some higher position, possibly an adjunct to CP, containing the oblique marker *t*", which he labels XP. This relevant structure is represented by (29):

[24]Exceptions are as follows: (i) before the remote determiner *ɬ* where *t* phonologically reduces (Kroeber, 1997; Koch, 2006); (ii) in the case of locative relatives, where a preposition introduces the clause; and (iii) in the case of headless relative clauses (Koch, 2006, fn5). Interestingly, *t* does surface before headless relatives in Nxaʔamxcín and Okanagan.

[25]The oblique marker *t* in Nłəʔkepmxcín is segmentable from the 'specific' and 'unrealized' determiners *e* and *k*. In keeping them together, I follow the convention of Thompson and Thompson (1992), who analyze *t* and *k* as a "single descriptive marker" (p.153), for example.

[26]The present determiner *(h)e* coalesces with the oblique marker *t* after movement, to form *te*. The intransitive predicate *łaʔx̌ans* "eat" in (28b) will take an oblique marked object in main clause contexts, including optionally the irrealis determiner *k* (Koch, p.c.), and so it is possible to analyze *tk* in (28) as introducing a PP which has raised from a post-clausal position, on analogy with Nłəʔkepmxcín (13) and Okanagan passive agent and instrument extractions. In other words, *t* in (28b) carries nominal case information, and has coalesced with the *t* which normally introduces relative clauses in Nłəʔkepmxcín.

(29)



The categorial identity of XP is not immediately important for our purposes, but the existence of an intermediate projection is important.[27]

Similar to Nɬəʔkepmxcín, headed relative clauses in Secwepemctsín (a.k.a. Shuswap) are introduced by the oblique case marker *tə* (Gardiner, 1993, 67). (30a) shows a subject extraction, and (30b) an object extraction:

(30) a. č-lx̓-m-st-ɛ́tn ɣ sqɛ́lmx^{w} **tə**
CUST-know-UNSP-CAUS-1SG.ERG DET man OBL
wik-t-x.
see-TR-2SG.ERG
I know the man you saw. (Gardiner, 1993, 67, ex. 166)

b. pnhɛ́ʔn k-wik-t-x-wəs ɣ sqɛ́lmx^{w} **tə**
when IRR-see-TR-2SG.ERG-3SG.DEP DET man OBL
c̓úm̓qs-n-s ɣ Mary.
kiss-TR-3SG.ERG DET Mary
When did you see the man that kissed Mary? (Gardiner, 1993, 162)

In both cases, the nominal *sqɛ́lmx^{w}* "man" is underlyingly a direct argument of a transitive relative clause. Assuming that Secwepemctsín relatives are derived by movement, the prediction is that the clausal remnant should be introduced by one of the three 'direct case' determiners: proximal ɣ, distal *l*, or irrealis *k*.[28] The

[27] Koch (p.c.) is currently investigating the hypothesis that XP is a focus projection, i.e. FocP.

[28] See Gardiner (1993, 24) for a discussion of the Secwepemctsín determiner system. It seems unlikely that the oblique marker *tə* which introduces relatives in Secwepemctsín consists of *t* plus a coalesced determiner (which is the case for Nɬəʔkepmxcín), at least synchronically, given the phono-

fact that this prediction is *not* upheld means one of two things: (i) In contrast to the other two Northern Interior Salish languages, Secwepemctsín relative clauses are not formed by movement; or more likely (ii) the moved determiner elides after the oblique marker. The second hypothesis is supported by several points.

Firstly, Kroeber (1999, 339) presents data showing that Secwepemctsín locative extractions may involve 'preposition fronting', similarly to Nłəʔkepmxcín (13):[29]

(31) m-wík-t-s ƛ̓-ʔéne ɣ s-c-ʔál-cn-s
UNSP-see-TR-3SG.ERG OBL-here DET NOM-STAT-freeze-edge-3SG.POSS
ɣ cptúkʷ n sxʷúynt w-s **n** séxʷm-əs
DET hole in ice PROG-3SG.CONJCT at bathe-3SG.CONJCT
ɣ twwíwt.
DET youth
There they saw the frozen edges of the hole in the ice where the youth had bathed. (ShL T8.172)

Secondly, note that headless relative clauses *are* introduced by a proximal ɣ or distal *l* determiner, and not the oblique marker *tə* (Gardiner, 1993):

(32) č-lx̓-m-st-ɛ́tn **l** wik-t-x.
CUST-know-UNSP-CAUS-1SG.ERG DET see-TR-2SG.ERG
I know the one you saw./I know that you saw him. (Gardiner, 1993, 67)

The fact that headless relatives are introduced by determiners, and headed relatives by the oblique marker (or locative marker) might receive explanation under the following scenario: As in Okanagan, the particles which introduce a pre-posed or headless relative in Secwepemctsín must be consistent with the selectional restrictions of the main clause predicate. In (32) for example, the clause must be introduced by a determiner, since the entire relative clause head + clausal modifier constituent is a main clause transitive object argument.[30] If we assume that the moved determiner elides after the oblique marker in headed relatives, but that the oblique marker elides before the moved determiner in headless relatives (because

logical shape of Secwepemctsín determiners.

[29]Kroeber states that for (31), "unfortunately, it is not clear whether it should be interpreted as a headed relative clause (modifying *cptúkʷ [n sxʷúynt]* 'hole [in the ice]'): if it is, then it would indicate that preposition fronting, or something like it, occurs in Secwepemctsín." As an alternative, he explains that *n* "at" may code the adverbial relation of *séxʷm-əs* "he bathed" to the main clause predicate.

[30]To clarify, this does not mean that the main-clause predicate *selects* the determiner in these cases, since the determiner has moved from a clause-internal position, but only that the determiner is *consistent* with the main-clause predicate's selectional restrictions. This same requirement also holds for Okanagan, and explains why pre-posed relatives are marginal or ungrammatical in certain cases.

of the aforementioned consistency requirement), then we have a straightforward explanation for the data. Formally speaking, all relatives in Secwepemctsín are of category XP, as they are in Nłəʔkepmxcín, but the X position is null for headless relatives.[31]

My analysis predicts that either the oblique marker *or* determiner may introduce a clausal remnant, but not both. Indeed, the non-co-occurrence of these particles seems to be a general feature of the Secwepemctsín grammar, since locative adjuncts, for example, are introduced only by prepositions, and never with a co-occurring determiner (Gardiner, p.c.). Note that under this analysis, there is no principled reason why a headed relative might not be introduced by a determiner, as occurs in Okanagan. Data from Kuipers (1974) and Kroeber (1999) suggest that this pattern is indeed possible (33):[32]

(33) a. yʔéne ǩəǩéʔ t qlmúxʷ ... ɣ ƛ̓xʷ-nt-es ɣ
that powerful ATT person ... DET beat-TR-3SG.ERG DET
ǩyúm t kʷúkʷpy̓.
big ATT chief
the clever (powerful) Indian ... who had won against the great chief.
(ShL T7.85),(Kroeber, 1999, 301)

b. ʔeƛ wʔéx nɣíʔ ɣ cncénəmn ɣ cwc̓éẃməs t sqléẃ.
CONJ AUX DEM DET Chinese DET panning OBL gold
And there were Chinese there, who were panning for gold.
(Kuipers, 1974, 103)

It may therefore be the case that it is only a strong preference, not a requirement, that the moved determiner (rather than the oblique marker) elide in the case of a headed relative. This means that in Secwepemctsín, similar to Nłəʔkepmxcín and Okanagan, both particles are underlyingly present, but that a co-occurence restriction in Secwepemctsín prevents both from surfacing simultaneously.

Clearly, more work is needed on relativization in Secwepemctsín, but for the present purposes, it is important simply to take note of two facts: (i) that oblique *t* introduces headed relatives, regardless of the grammatical status of the relativized

[31]It is also possible that the determiner *l* in (32) does not have its source from within the relative clause, but rather introduces the containing DP, whose head happens to be null. This derivation is somewhat more complex, and results in an intermediate stage ordering of DET-OBL, which is unattested in the Northern Interior. In any case, a determiner test similar to that used in Koch (2006) may help to clarify the issue.

[32]Gardiner (p.c.) suggests that a direct determiner introduces the clause in (33b) because this is an example of a headless relative clause, but it is currently unclear to me why *cncénəmn* cannot be analyzed as the overt head.

constituent; and (ii) locative extractions are consistent with a movement analysis.

In sum, data show that Northern Interior Salish relatives may be introduced by *t*, crucially in cases where *t* does not code the relation of the gap to the clausal remnant. I now turn to the Southern Interior, and examine data from Nxaʔamxcín.

4.3 Evidence from Southern Interior Salish: Nxaʔamxcín

Nxaʔamxcín (a.k.a. Moses-Columbian), a sister language to Okanagan, is similar to the Northern Interior languages just discussed, in that an oblique marker *t* introduces relative clauses, as shown in (34a). Pre-nominal relatives are also introduced by *t* in Nxaʔamxcín (34b), as are headless relatives (34c).[33] Unlike in Secwepemctsín, there is no co-occurrence restriction preventing a determiner and oblique marker from both introducing a relative clause in Nxaʔamxcín (34b).

(34) a. núx̌^{w}t ʔací sqəl̓tmíx^{w} **t** c-my-stú-n.
go DET man OBL CUST-know-CAUS-1SG.ERG
The man that I knew left. (Willett, 2003, 97, ex. 62)

b. wíkɬn ʔaní **t** ʔacmúx^{w}t smʔámm.
see-TR-1SG.ERG DET OBL CUST-laugh woman
I saw the woman who laughed. (Willett, 2003, 100, ex. 74)

c. ʔacsúx^{w}sn ʔaní **t** kɬ-c̓əmusntx^{w}.
CUST-know-CAUS-1SG.ERG DET OBL kiss-DIR-3SG.ERG
I know the one that you kissed. (Willett, 2003, 101, ex.77)

The 'general' article *ʔaní* is used to introduce direct arguments of transitive predicates in Nxaʔamxcín (Willett, 2003, 84),[34] while the oblique marker *t*, just as in Okanagan, is used to introduce non-direct arguments, for example intransitive objects, ditransitive themes, and ergative arguments (Willett, 2003, 87). The fact that *t* surfaces before a transitive relative clause like (34), where the object has

[33] Oblique marking of ergatives in Nxaʔamxcín is not limited to passive agents (Willett, 2003, 88), but from examples I have been able to find, the sequence *ʔaní t* found in (34b) occurs only before relative clauses. This suggests that the oblique marker in (34b) is associated with the clausal remnant, and not the moved DP.

[34] Or one of three 'deictic' determiners, *ʔaxáʔ* 'proximal', *ʔací* 'non-proximal', and *ʔałúʔ* 'distal'. Note their phonological resemblance to demonstratives in Okanagan. The Nxaʔamxcín data support Kroeber's hypothesis concerning the source of DP-internal prepositions in the Southern Interior, if we assume that the Okanagan determiner *iʔ* was once a bi-syllabic demonstrative-like determiner, similar to Nxaʔamxcín *ʔaní*, but later underwent truncation, which did not occur in Nxaʔamxcín. *ʔaní* may in fact be the only true determiner in Nxaʔamxcín, since data in Mattina (2006) show that it, unlike the other determiners, cannot function as a predicate.

been extracted, is not consistent with an analysis where *t* has moved from a clause internal position. (34) therefore seems directly parallel to Secwepemctsín (30a) and Nɬəʔkepmxcín (28a), and the initial hypothesis is thus that *t* in (34) is the head of an XP in a structure essentially equivalent to (29).

Locative relative clause data, however, show that (29) is not a correct representation of relative clause formation in Nxaʔamxcín. (35) below show determiner-locative marker sequences introducing the clausal remnant, which is characteristic of locative adjunct extractions in Okanagan (cf 18), except that an additional *t* occurs on the *inside* of the moved DP.[35]

(35) a. q^{w}túnt ʔaní xʌ̓ut$_2$ [[**ʔaní lci** [$\oslash_{NP_2}$]$_{DP_1}$] **t**
big-STAT DET rock DET in.there OBL
kɬ̓túcntn ʔinn̓ník^{w}n t_{1CP}].
POS-put.down-DIR-1SG.ERG 1SG.POSS-knife
The rock under which I laid the knife is big. (Willett, 2003, 99, ex.71)

b. nəst ʔaxá ʔaní pən̓pən̓áqs$_2$ [[**ʔaní lci** [$\oslash_{NP_2}$]$_{DP_1}$]
heavy-STAT DEM DET *pən̓pən̓áqs* DET in.there
t nalíxn ʔintəm̓təm̓útn t_{1CP}].
OBL POS-put.down-TR-1SG.ERG 1SG.POSS-clothing
The pən̓pən̓áqs where I put my clothes is heavy. (Willett, 2003, 99, ex.70)

It is important to note that sequences of determiner-locative-oblique are only possible in extraction contexts in Nxaʔamxcín, which means that *t* cannot have moved with the locative DP. Together with Okanagan (26) above, (35) constitutes strong evidence that oblique-marked relative clauses in the Southern Interior, just as in the Northern Interior, do not necessarily involve movement of an oblique marker.

Southern Interior Salish languages are thus similar to their Northern Interior

[35]The locative morpheme *lci* is segmentally, and semantically, more complex than what I analyze as locative K heads in Okanagan. Moses also has the simpler locative 'prepositions' found in Okanagan, for example *l*. I currently lack data showing a locative relevant clause introduced by *ʔaní l*, although I predict that these should be possible, since *ʔaní l* introduces nominal adjunct in main-clause 'prepositional-phrase'-like contexts. Locative *lci* resembles more closely the Okanagan demonstrative adverbial *ilíʔ* "there", but must be analyzed differently, since demonstratives in Okanagan do not occur internal to DP, but adjoin to the exterior. I label *lci* as a Loc head, rather than a K head, for this reason.

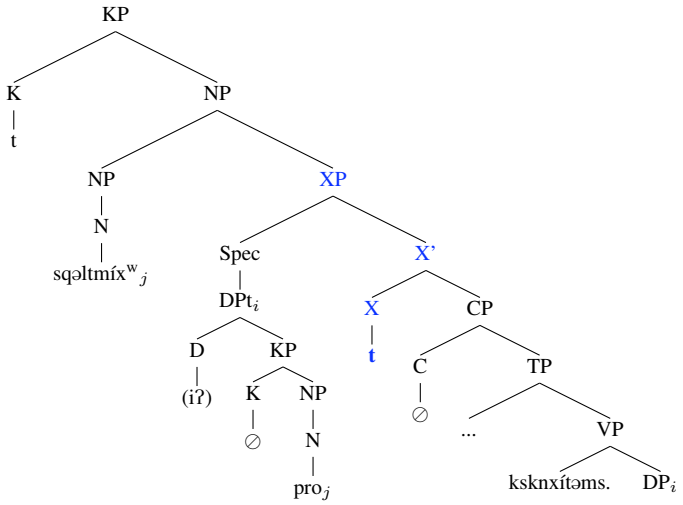
It is possible that *lci* is a clause-initial locative adverb, and has not moved with the determiner, which in turn means that *t* does not mark the left-periphery in these cases but is situated further inside the clause. A further structural revision will be necessary if this is true. It nevertheless seems reasonable to tentatively assume that since *lci* codes the relation of 'the rock' to the relative clause predicate in (35a), that it may also have undergone movement with the determiner.

counterparts with respect to relative clause formation, but with one important difference: the oblique marker which introduces the relative clause surfaces *before* the moved constituent in the Northern Interior, but *after* the moved constituent in the Southern Interior. This difference implies a structural distinction with regards to relative clause formation. I now turn to an analysis of this difference.

5 Analysis

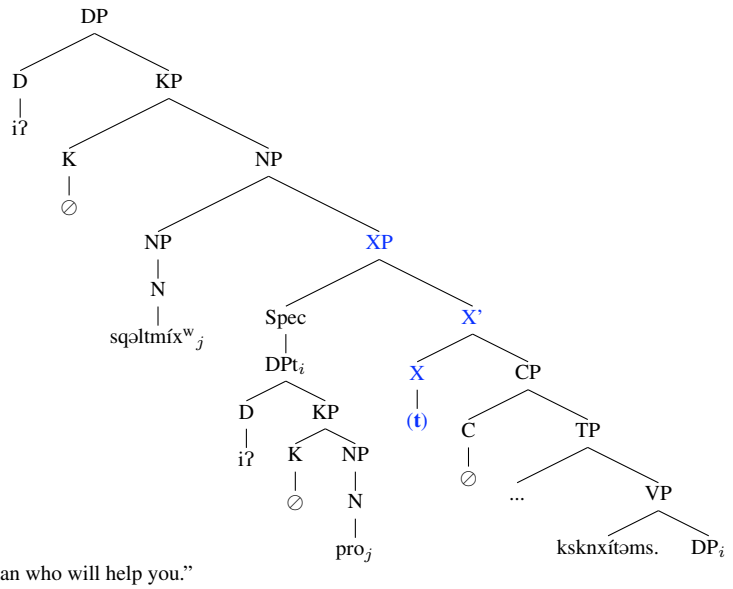
I propose that in both Northern and Southern Interior languages, the left-periphery of a relative clause is defined by XP, rather than CP, as implied by Koch (2006). The difference is that in the Northern Interior languages, a clause-internal DP moves to the specifier position of CP (cf 29) while in Southern Interior languages, a clause-internal DP moves to the specifier position of XP. Okanagan (36a,b) represents data given earlier as (25a,b).

(36) a.



"...a man who will help you."

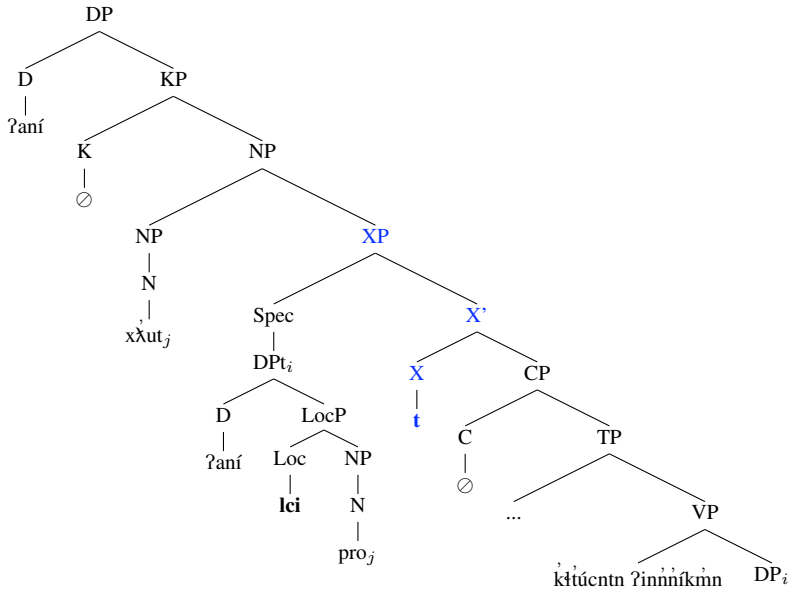
b.



"...a man who will help you."

This higher landing site (Spec XP) derives the correct ordering between the initial moved determiner and the following relative clause oblique marker, which is the pattern characteristic in the Southern Interior. This structure will also correctly derive locative relative clauses in Okanagan, as well as Nxaʔamxcín (37):

(37)

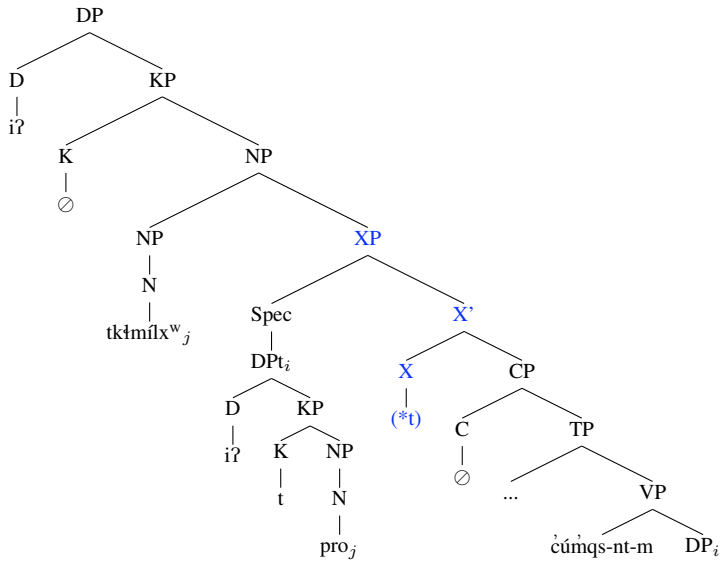


"...the rock under which I laid the knife."

This analysis predicts that determiner-locative-oblique sequences should be possible in Okanagan, just as in Nxaʔamxcín (37). This is so far unattested in Okanagan, and may be due to a co-occurrence restriction on sequences of case-marking locative and/or oblique markers. In other words, a double case-marker filter[36] in Okanagan prevents a sequence of two oblique markers in instrumental and passive agent extractions (38), and a locative-oblique marker sequence in locative adjunct extractions.[37]

(38) a. Mike wiks iʔ tkɬmílx$^{w}{}_{2}$ [[iʔ t $[\oslash_{NP_2}]_{DP_1}$]
Mike see-(DIR)-3SG.ERG DET woman DET OBL
(*t) c̓úmq̓s-nt-m t_{1XP}].
(*OBL) kiss-DIR-PASS
Mike saw the woman he was kissed by.

b.



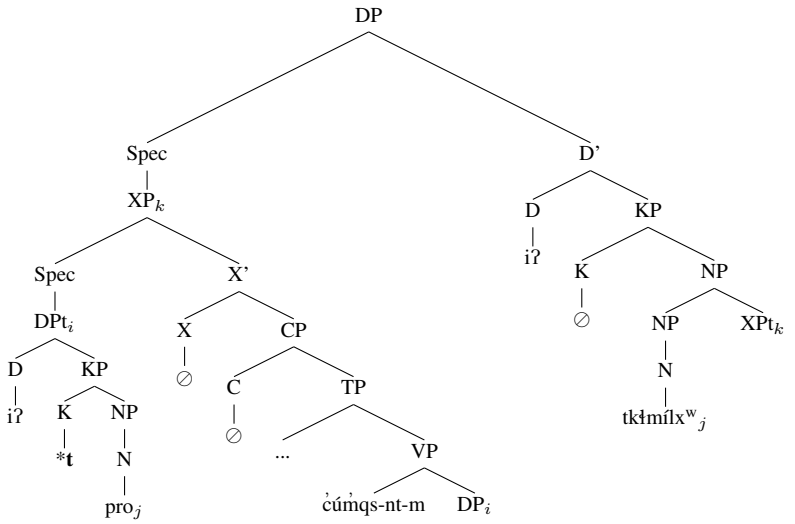
This analysis has the advantage of explaining the overwhelming preference in Okanagan for post-nominal relative clauses, as opposed to their pre-posed equivalents. Although pre-posed relatives are in certain cases possible in Okanagan (cf

[36]Similar in spirit to the Double Determiner Filter advocated by Davis (2010) for St'át'imcets relative clauses. The double case-marker filter presumably applies only to two sequences of oblique markers in Nxaʔamxcín, while Okanagan has extended the filter to include sequences of any two case markers.

[37]Although if my morpho-phonological analysis of (26) is correct, and proclitics attach to the leftmost element in XP (in this case *t*), the prediction is that determiner-locative-proclitic-oblique sequences should be possible, since the double-case-marker filter would not apply in these cases.

21b), these are generally marked since the particles which introduce the pre-posed clausal remnant must *also* match the selectional restrictions of the main clause predicate.[38] To illustrate, consider again (38). The relative clause *iʔ t c̓úmq̓s-nt-m* 'who he was kissed by' cannot be preposed over the head-containing DP *iʔ tkɬmílx*^{w} 'the woman' because the sequence *iʔ t* cannot introduce an object of a sentence-initial main-clause transitive predicate like *wiks* 'He saw x'. In other words, it is necessary for the case marker *t* to delete in order for the entire relative clause + head constituent to be construed as the DP object argument of the main predicate,[39] but then the relation between the gap and the relative clause is obscured. The following structure is therefore ungrammatical:

(39)



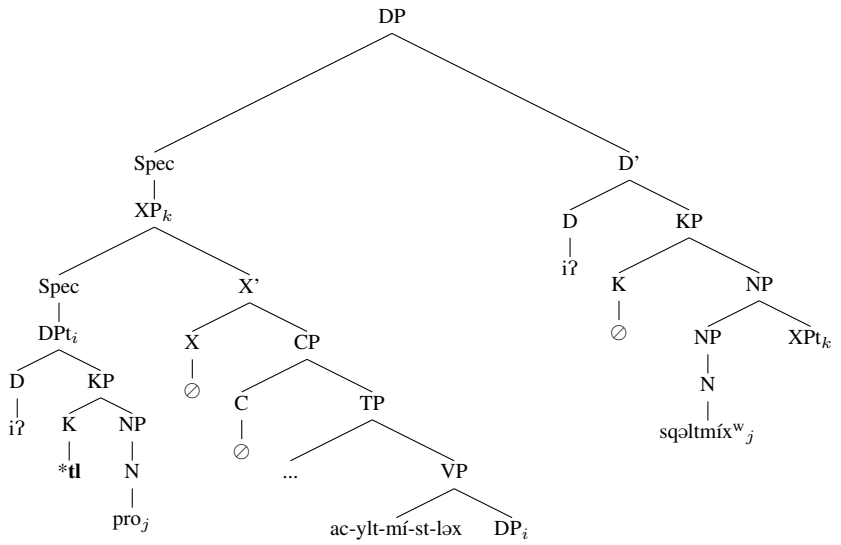
"...the woman he was kissed by."

The same reasoning explains why pre-posed locative relatives are ungrammatical in Okanagan. For an example like (18a, 40), the entire relative clause + head constituent can only be construed as an object argument of the main clause predicate if the constituent is introduced by *iʔ*. This requires that the locative case marker *tl* delete, but then this obscures the relation between the gap and the relative clause, as well as resulting in the loss of valuable deictic information. (40) is therefore ungrammatical, while the post-nominal equivalent is acceptable.

[38] See above my hypothesis for why headed relatives in Secwepemctsín are introduced by oblique markers, and headless relatives are introduced by determiners.

[39] The requirement that the particle(s) which introduce a head + clausal modifier (or clausal modifier + head) clearly reflect the relationship between the constituent as a whole and the main clause predicate is also active in Secwepemctsín, and explains why headless relatives like (32) are introduced by a determiner rather than an oblique marker.

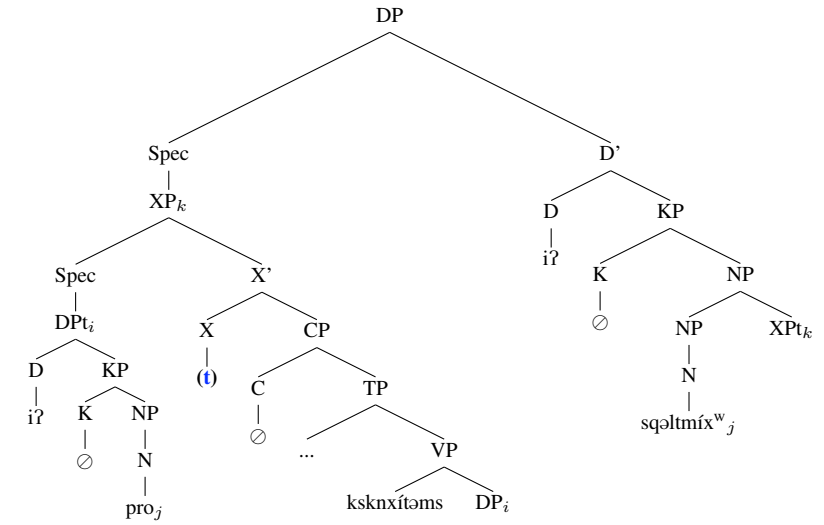
(40)



"...the man they were running away from."

Interestingly, the pre-posed equivalents of Okanagan (25a,b) *are* acceptable:

(41)



"...the man who will help you."

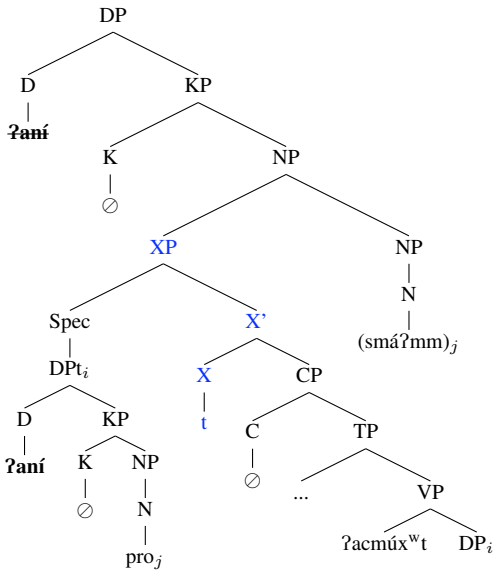
Because *t* in these cases does not code the relation between the gap and the clausal remnant (i.e. it does not move as a constituent with the clause-internal DP), but only serves to 'optionally' introduce the relative clause, it may easily elide in order for the entire clausal remnant + head DP constituent to be construed as an argument

of the main predicate. (41) is therefore acceptable.

In sum, Okanagan, like Nɬəʔkepmxcín, Secwepemctsín, and Nxaʔamxcín, uses *t* to introduce relatives, and this use of *t* is independent of *t* as a case marker, which codes the relation between the gap and the clausal remnant.[40]

Like St'át'imcets (Davis, 2010), Nxaʔamxcín allows pre-nominal relatives, like example (34b) above. These can be derived from a canonical post-nominal structure by simply inverting the order of the NP and the adjoined XP modifier, as shown in (42).

(42)



"...the woman/one who laughed." (Willett, 2003, 100, ex. 74)

This implies that in Nxaʔamxcín, head-modifier ordering between NP and XP is in free variation. The NP-final variant will result in a sequence of two determiners, one of which will delete as a result of a Double Determiner Filter (Davis, 2010, 22).[41]

[40] As mentioned before, there are aspectual restrictions on where relative *t* can surface in Okanagan, which does not seem to be characteristic of any of the other languages surveyed here. Additionally, there is no clear 'matching' effect between nominal and head-introducing particles in any of the other languages, as there seems to be in Okanagan, but the prediction is that *if* Secwepemctsín allowed determiners and locative/oblique markers to co-occur, that a matching effect would also be evident.

[41] Davis formulates this as consisting of two parts:

(i) a. *Double Determiner Filter*
*[D_1...D_2] where no lexical head intervenes between D_1 and D_2

b. *Determiner Deletion*
Delete one of two phonologically adjacent determiners.

Finally, this analysis offers an explanation of why in Nxaʔamxcín, the optional absolutive case-marker *wa* surfaces to the right of an associated absolutive argument in extraction contexts, but surfaces to the left of the absolutive argument in other contexts (Willett, 1996, 2003).

(43) a. máʔ̓ʷ-s **wa** **nlxʷátkʷtn** smʔámm.
break-(TR)-3SG.ERG ABS pot woman
'The woman broke the pot.' (Willett, 2003, 114, ex. 157)

b. c-mi-stú-nn ʔaní **ttẃít**$_2$ [[**wa** [∅ [∅$_{NP_2}$]$_{DP}$]$_{KP_1}$]
CUST-know-TR-1SG.ERG DET boy ABS DET
t kɬc̓əmús-nt-s kiʔ̓ánaʔ t_{1XP}].
OBL kiss-TR-3SG.ERG girl
'I know the boy that the girl kissed.' (Willett, 2003, 97, ex. 63)

In Nxaʔamxcín, determiners are regularly absent before argument nominals (Mattina, 2006), as shown in (43a). The categorical status of the moved constituent in (43b) is thus called into question. As opposed to the Nxaʔamxcín locative markers, *wa* is not a DP-internal K-head since it may apparently precede a determiner in main clause contexts. It introduces both simple absolutive DPs (44a), as well as headless relative clauses which are absolutive DP arguments of main-clause predicates (44b):[42]

(44) a. ʔac-yáy-əxʷ **wa** [ʔałúʔ kkíy̓aʔ-s$_{DP}$] t ǰaǰápaʔ.
ASP-weave-ASP ABS DET grandmother-3SG.POSS OBL bag
'His grandmother is weaving a bag.' (Mattina, 2006, 105, ex.14).

b. ʔíca kʷa ʔac̓ǰ-s **wa** [[ʔałúʔ [∅$_{NP_2}$]$_{DP_1}$] t
then see-(TR)-3SG.ERG ABS DET OBL
ʔac-xʷúẃi t_{1XP}].
ASP-fly
'Then he saw the one flying.' (Mattina, 2006, 125, ex.103).

As indicated by the bracketing in (43b), the examples in (44) show that *wa* is a DP-external case marker (Bittner and Hale, 1996), and implies that Nxaʔamxcín has two separate structural positions reserved for case-marking: one is DP-internal,

[42] 'His grandmother' in (44a) is the subject argument of an intransitive predicate, hence the absolutive marking on the subject, and the oblique marking on the notional object. For (44b), it is unclear whether *wa* has moved with the clause internal DP (cf 43b) or indicates that the entire relative clause is an absolutive argument of the main-clause predicate. If the latter holds true, then the prediction is that a secondary *wa* should be grammatical before the DP *ʔaní ttẃít* 'the boy' in (43b).

the other is DP-external. Clearly more work is needed on this interesting problem.

By way of summary, if we assume that the clause-internal moved constituent in the Southern Interior languages lands in a higher position than in the Northern Interior languages, then with an otherwise identical structure and a minimal amount of extra syntactic machinery, we are able to successfully account for a wide range of relative clauses in Southern Interior Salish, as well as account for the somewhat aberrant distribution of oblique marking in Okanagan. Although relative clause data from Coeur d'Alene and Kalispel are sparse, what may emerge is an interesting split between the Northern and Southern Interior sub-branches of the family with regards to relative clause formation.

6 The relation between DP-internal prepositions and relative clause formation in the Southern Interior

Southern Interior Salish languages all share the striking property of having DP-internal locative marking, rather than the prepositions found in Northern Interior languages.[43] In reconstructed Proto-Salish, prepositions also precede determiners,[44] and so the question arises as to what caused Southern Interior languages to change the linear ordering of the determiner and preposition.

Kroeber (1999) suggests that determiners in the Southern Interior were originally DP and PP-adjoined demonstratives, which underwent truncation and an accompanying loss of deictic force, thus becoming the determiners that we know today. In the context of a PP, for example, an adjoined demonstrative became a determiner, and the original PP-internal determiners presumably disappeared.[45]

I suggest here two possible alternative accounts of how Southern Interior Salish came to have DP-internal locative and oblique marking. Both accounts rest on my analysis of relative clause formation, which I have outlined in this paper. Under the first account, which is not consistent with Kroeber (1999), a change in relative clause formation conditioned a linear inversion between case markers and determiners. Under the second account, which is consistent with Kroeber (1999), the historical process outlined in the preceding paragraph conditioned a change in relative clause formation.

[43]Prepositions in Nɬəʔkepmxcín and St'át'imcets precede a determiner, while prepositions in Secwepemctsín never co-occur with a determiner.

[44]The PREP-DET ordering holds everywhere in the Salish family except the Southern Interior.

[45]Nxaʔamxcín offers the strongest evidence for Kroeber's hypothesis. Both the determiners and demonstratives in this language have a CVCV shape, and so we can easily infer that perhaps Nxaʔamxcín determiners resisted the truncation which occurred with Okanagan determiners, for example (Mattina, 2006). Alternatively, Nxaʔamxcín may have completely lost its original determiners, and borrowed a set of demonstrative adverbs to replace them (Davis, p.c.).

6.1 Analysis 1: Change in Relative Clause formation Conditions Inversion

Consider an earlier stage of Okanagan, where relative clause formation occured exactly as in Nɬəʔkepmxcín, and the language exhibited DP-external prepositions:

(45) **Stage 1:** Equivalent to Nɬəʔkepmxcín

a. iʔ sɔxʷm̓aʔm̓ayaʔm-s$_2$ [**t** [[**iʔ** [$\oslash_{NP_2}$]$_{DP_1}$] knxít-t-m
DET teacher-3SG.POSS OBL DET help-DIR-PASS
t_1 **t** **iʔ** tɔtwít$_{CP}$]$_{XP}$]
OBL DET boy
...the teacher who was helped by the boy.

b. iʔ sɔxʷm̓aʔm̓ayaʔm-s$_2$ [**t** [[**(t)** [**iʔ** [$\oslash_{NP_2}$]$_{DP_1}$]$_{PP_1}$]
DET teacher-3SG.POSS OBL (OBL) DET
knxít-t-m t_1 **l** **iʔ** sɔnq̓ɔy̓míntɔn.$_{CP}$]$_{XP}$]
help-DIR-PASS LOC DET school
...the teacher that helped him at school.

Example (45a) includes an extracted passive patient, and example (45b) includes an extracted passive agent. (45a) additionally has a clause-internal prepositional phrase which is the oblique-marked clause-internal agent. (45b) has a clause internal locative prepositional phrase. Just as in Nɬəʔkepmxcín today, Okanagan relatives were at one time always introduced by the oblique marker (head X), and a clause-internal DP (or PP) moved to the specifier position of CP. In (45b), which involves extraction of a passive agent, this resulted in a sequence of two oblique markers, only one of which was presumably realized.[46]

At some point during the development of Southern Interior languages, an unknown event prompted a change in relative clause formation. The moved DP (46a) or PP (46b) now lands in the Specifier position of XP, rather than CP:

(46) **Stage 2:** Movement to Spec XP instead of Spec CP

a. iʔ sɔxʷm̓aʔm̓ayaʔm-s$_2$ [[**iʔ** [$\oslash_{NP_2}$]$_{DP_1}$] **t** [knxít-t-m
DET teacher-3SG.POSS DET OBL help-DIR-PASS
t_1 **t** **iʔ** tɔtwít$_{CP}$]$_{XP}$]
OBL DET boy
...the teacher who was helped by the boy.

[46]Note that an overt clause-internal oblique-marked agent is necessary in (45a) to confirm the status of the extracted constituent as a patient, since both patient and agent extractions introduce the clausal remnant by the same surface sequence of particles. It is possible that this ambiguity helped motivate an inversion between the determiner and case markers.

b. iʔ sɘxʷm̓aʔm̓ayaʔm-s$_2$ [[**t** [**iʔ** [$\oslash_{NP_2}$]$_{DP_1}$]$_{PP_1}$] **t**
DET teacher-3SG.POSS OBL DET OBL
[knxít-t-m t_1 **l** **iʔ** sɘnq̓ɘy̓míntɘn.$_{CP}$]$_{XP}$]
help-DIR-PASS LOC DET school
...the teacher that helped him at school.

As can be seen in (46) this change resulted in a discrepancy between the linear order of determiner and preposition found in non-extraction contexts on the one hand (PREP-DET), and in extraction contexts on the other hand (DET-PREP). This discrepancy motivated an inversion of determiner and preposition in non-extraction contexts, on analogy with the ordering found before relative clauses:

(47) **Stage 3:** Inversion of P to case marker, then loss of relative *t*

a. iʔ sɘxʷm̓aʔm̓ayaʔm-s$_2$ [[**iʔ** [$\oslash_{NP_2}$]$_{DP_1}$] **ŧ** [knxít-t-m
DET teacher-3SG.POSS DET OBL help-DIR-PASS
t_1 **iʔ** **t** tɘtwít$_{CP}$]$_{XP}$]
DET OBL boy
...the teacher who was helped by the boy.

b. iʔ sɘxʷm̓aʔm̓ayaʔm-s$_2$ [[**iʔ** [**t** [$\oslash_{NP_2}$]$_{KP_1}$]$_{DP_1}$] **ŧ**
DET teacher-3SG.POSS DET OBL OBL
[knxít-(t)-m t_1 **iʔ** **l** sɘnq̓ɘy̓míntɘn.$_{CP}$]$_{XP}$]
help-DIR-PASS DET LOC school
...the teacher that helped him at school.

The oblique marker which always precedes relative clauses is then lost in cases of passive-patient extraction (47a), since it is now indistinguishable from a case-marker *t* which has become associated with agent-extraction. In agent-extractions (47b), relative *t* merged with the case-marker. Today, relative *t* only surfaces in Okanagan where it cannot be misconstrued as a case-marker: that is, optionally before future marked relatives.

6.2 Analysis 2: Loss of original determiners conditioned a change in relative clause formation

The second alternate analysis is consistent with Kroeber (1999). We begin again with an earlier stage of Okanagan essentially equivalent to Nɬəʔkepmxcín (45).

The original determiners were lost as DP and PP-adjoined demonstratives evolved into a new set of determiners (in red type), which occurred external to the original prepositions (Stage 2b):

(48) **Stage 2b:** Loss of original determiners and evolution of original demonstratives into a new set of determiners

a. i ʔ sɘx^{w}ma ʔmáya ʔm-s$_2$ [t [[**i ʔ** ~~i ʔ~~ [$\oslash_{NP_2}$]$_{DP_1}$]
DET teacher-3SG.POSS OBL DET ~~DET~~
knxít-t-m t_1 **i ʔ** **t** ~~i ʔ~~ tɘtwít$_{CP}$]$_{XP}$]
help-DIR-PASS DET OBL ~~DET~~ boy
...the teacher who was helped by the boy.

b. i ʔ sɘx^{w}ma ʔmáya ʔm-s$_2$ [t [[**i ʔ** [**t** [~~i ʔ~~ [$\oslash_{NP_2}$]]$_{PP_1}$]$_{DP_1}$]
DET teacher-3SG.POSS OBL DET OBL ~~DET~~
knxít-t-m t_1 **i ʔ** **l** ~~i ʔ~~ sɘnqɘýmíntɘn.$_{CP}$]$_{XP}$]
help-DIR-PASS DET LOC ~~DET~~ school
...the teacher that helped him at school.

During the final stage 3, movement of a clause-internal DP or PP was shifted to a higher position, in order to level the discrepancy between the linear order of determiner and preposition found in non-extraction contexts (DET-PREP), and that found in extraction contexts (PREP-DET). This stage is represented above as (47).

6.3 Weighing the two analyses

The two analyses sketched above differ in the following way: For Analysis 1, the syntax is driving the morphology, while for Analysis 2, the morphology is driving the syntax. Kroeber's hypothesis concerning the origin of the DP-internal locative markers found in the Southern Interior is grounded in typological fact: cross-linguistically, determiners often have their origins in demonstratives (Greenberg, 1978). Furthermore, I have no answer for what factor could possibly motivate the change in relative clause formation proferred by Analysis 1, if *not* the loss of the original determiners, following Kroeber's hypothesis. Although it is possible that there is a precedent for such a change in other languages, I do not know of any. Analysis 2 seems preferable for these reasons.

There is at least one piece of evidence that seems to support Analysis 1 over Analysis 2, however, if for no other reason than it either calls into question Kroeber's hypothesis, or introduces new questions concerning the time depth and ordering of the necessary changes. The Secwepemctsín determiner *ɣ(ə)* is probably cognate with the Okanagan determiner *i ʔ* (Davis, p.c.). Secwepemctsín and Okanagan belong to different sub-branches of the Salish family, which suggests a considerable time depth, but while Okanagan has DP-internal locative markers, Secwepemctsín exhibits the remnant of the proto-Salish prepositional system. Although determiners and prepositions/locative markers do not co-occur sequentially

in Secwepemctsín (Gardiner, p.c.), it does have an oblique-irrealis 'article', *təkˀ*, which is used to mark non-specific nominals (Gardiner, 1993, 26):

(49) a. kúl-m tə məxɛ́xyəʔ.
make-MID OBL basket
She made a basket.

b. mɛʔ kúl-m əkʷə təkˀ məxɛ́xyəʔ.
EXP make-MID REP OBL.IRR basket
She's going to make a basket. (Gardiner, 1993, 26)

təkˀ is cognate with the Nɬəʔkepmxcín oblique-irrealis determiner complex *tk* found before relative clauses (cf 28b). Furthermore, Gibson (1973) analyzes Secwepemctsín *təkˀ* as consisting of the oblique marker *tə* plus the irrealis determiner *k*. Diachronically at least, this certainly seems to be the case, which means that Secwepemctsín did exhibit the proto-Salish PREP-DET ordering at one point during its history, thus placing it in line with the other Northern Interior languages. Assuming cognacy between Okanagan *iʔ* and Secwepemctsín proximal determiner *ɣə*, and that *ɣə* occurs in the same syntactic position as the irrealis determiner *k*, we might infer that a proximal oblique in Secwepemctsín was once introduced by **tə ɣə*, and a locative oblique by **nə ɣə*, for example. But if both Okanagan and Secwepemctsín determiners have evolved from DP/PP-adjoined demonstratives, then we must conclude that for Secwepemctsín, an additional set of *locative particles* evolved outside of the new DP domain, and the original locative markers were lost along with the original determiners. This would effectively mean that Secwepemctsín was once like Okanagan is today, with DP-internal locative marking, but there is no evidence that Northern Interior languages ever had such structures.

And so depending on the strength of the cognate relation between Okanagan *iʔ* and Secwepemctsín *ɣə*, Analysis 1 may actually garner some support.

7 Further Questions

There are many questions which remain, but I will endeavor to address a few of the most salient here.

First of all, if Kroeber's hypothesis is incorrect, then we still have an explanation for why Southern Interior Salish languages have DP-internal locative marking (Analysis 1), but suddenly have no explanation for what may have conditioned a change in the way relative clauses are formed. I do not have anything illuminating to say on this issue at the moment, but it may be an avenue worth exploring.

Second, what is the categorical status of "XP" in Salish, and what syntactic generalizations could follow from assigning X one category label in lieu of another? For the Southern Interior at least, it is possible to analyze X as C; in other words, the oblique marker which introduces relative clauses may be a kind of complementizer. I refrain from making this claim because for Okanagan at least, in contexts involving non-relative clausal subordination, *t* is not found; i.e. it is not used as a complementizer. It is possible that it is assigning oblique status to the CP as a whole, but it is unclear what new generalizations may emerge from this analysis. It is also possible that its categorical status differs within the Southern Interior, since in Okanagan but apparently not in Nxaʔamxcín, relative *t* is only grammatical before predicates inflected with irrealis *ks-*. I have noted in passing that this could be happening on analogy with Nɬəʔkepmxcín *tk*, but there is in any case ample historical evidence to posit a separate syntactic position for *t*.

Thirdly, the nature of the 'matching' relation between the particles which introduce the relative clause head, and the particles which introduce the clausal remnant, remains obscure for Okanagan. Secwepemctsín relatives also display evidence for such a matching relation, although the relation is partially obscured by the absence of co-occurring determiners and oblique markers.

Finally, extraction data is glaringly scarce on Coeur d'Alene and Kalispel, which makes it difficult to say for sure whether my analysis of Okanagan and Nxaʔamxcín relatives can truly be extended to the Southern Interior as a whole. But it is nevertheless suggestive that both languages have DP-internal locative markers:

(50) Coeur d'Alene (Doak, 1997, ex. 373b, 375)

a. čn dɛxʷ-t xʷɛ tɛl̓ tp̓uy̓p̓uy̓šn.
1SG.NOM drop-RES DET FROM car
I fell out of the car.

b. xʷɛ hnkəsin naq̓ʷc xʷɛ st̓šá xʷɛ
DET 1SG.POSS-cousin steal-DIR-3SG.ERG DET huckleberry DET
tɛl̓ Annie črɛmqn.
FROM Annie Cheremkin
My cousin stole the berries from Annie Cheremkin.

(51) Spokane (Carlson, 1972, 55); Kalispel (Kroeber, 1999, 62)

a. kʷéys ɬuʔ x̌ʷəl̓ t̓a·pəmís
take-(DIR)-3SG.ERG DET LOC arrow-3SG.POSS
He took it for his arrow.

b. kʷém̓t sxʷx̌éʔi łuʔ l t̓éyeʔ esəmóq̓ʷ.
then mountain.goat DET LOC bad mountain
(Then) the mountain goat is in the bad mountain (KL T9.44)

Kalispel, at least, also shows evidence that locative relatives are formed by movement:

(52) xʷuy łaq̓ʷ-m-úleʔxʷ łuʔ l es-tixʷ-i t
go come.into.open.space DET LOC CONT-obtain-CONT OBL
s-x̌ʷeʔl̓í.
camas.in.ground
He came to an open field where people were gathering camas.
(Vogt, 1940), (Camp, 2007, 28)

Further work is needed on relativization in these languages before anything conclusive can be said with regards to the role of oblique marking in relative clauses.

8 Conclusions

I have claimed that Okanagan and Nxaʔamxcín show evidence that their relative clauses are formed by movement of a clause-internal DP to the left-periphery of the relative clause. Southern Interior languages thus form their relative clauses in a manner analagous to Northern Interior languages, but not identically. Otherwise anomalous oblique marked relative clauses in Okanagan, and a more general pattern of relativization in Nxaʔamxcín, together show that the moved constituent lands in a structurally higher position in these languages, than in the Northern Interior languages. Besides representing an interesting typological and syntactic split between two branches of the Salish family, I have suggested that this difference might also explain the DP-internal locative markers characteristic of Southern Interior languages.

Abbreviations

ABS	absolutive	GEN	genitive object
APPL	transitive applicative	IMPF	imperfective
ATT	attributive	INCEPT	inceptive
AUX	auxiliary	INDEP	independent pronoun
CAUS	causative transitivizer	INSTR	instrumental
CISL	cislocative	INTR	intransitivizer
COMP	complementizer	IRED	initial reduplication
CONJ	conjunction	IRR	irrealis
CONJCT	conjunctive	LOC	locative
CONT	continuative	MID	middle marker
CUST	customary/habitual	NEG	negative
DEM	demonstrative	NOM	nominalizer
DEON	deontic modal	OBJ	object marker
DEP	dependent	OBL	oblique marker
DET	determiner	PASS	passive
DIR	directive transitivizer	PERF	perfective
DITR	ditransitive applicative	PL	plural
EMPH	emphatic	POS	positional
EPIS	epistemic modal	POSS	possessive
ERG	ergative case	PROG	progressive
EXIS	assertion-of-existence	REP	reportative
EVID	evidential	SG	singular
EXP	expectational	STAT	stative
FRED	final reduplication	TR	transitivizer
FOC	focus marker	UNSP	unspecified
FUT	future	U.POSS	unrealized possessor
		YNQ	yes/no question

References

Bianchi, Valentina. 2002. Headed relative clauses in generative syntax. *Glot International* 6:197–204.

Bittner, Maria, and Ken Hale. 1996. The structural determination of case and agreement. *Linguistic Inquiry* 27:1–68.

Camp, Kelsi Marie. 2007. An interlinear analysis of seven Kalispel texts from Hans Vogt. Master's thesis, University of Montana, Missoula, MT.

Carlson, Barry F. 1972. A grammar of Spokane: a Salish language of eastern Washington. Doctoral Dissertation, University of Hawaii.

Chomsky, Noam. 1977. On wh-movement. In *Formal syntax*, ed. Peter Culicover, Thomas Wasow, and Adrian Akmajian, 71–132. Academic Press.

Davis, Henry. 2004. Locative relative clauses in St'át'imcets (Lillooet Salish). In *Papers for the 39th Annual International Conference on Salish and Neighboring Languages*, ed. J.C. Brown and Tyler Peterson, volume 14 of *University of British Columbia Working Papers in Linguistics*, 83–116. UBCWPL.

Davis, Henry. 2010. A Unified Analysis of Relative Clauses in St'át'imcets. *Northwest Journal of Linguistics* 4:1–43.

Doak, Ivy Grace. 1997. Coeur d'alene grammatical relations. Doctoral Dissertation, University of Texas at Austin.

Gardiner, Dwight. 1993. Structural Asymmetries and Preverbal Positions in Shuswap. Doctoral Dissertation, Simon Fraser University, Burnaby, BC.

Gibson, James A. 1973. Shuswap grammatical structure. Doctoral Dissertation, University of Hawaii.

Gillon, Carrie. 2009. The semantic core of determiners: Evidence from Sḵwx̱ú7mesh. In *Determiners: Universals and variation*, ed. Jila Ghomeshi, Ileana Paul, and Martina Wiltschko, 177–214. John Benjamins.

Greenberg, Joseph. 1978. How does a language acquire gender markers? In *Universals of human language*, ed. Joseph Greenberg, Charles Ferguson, and Edith Moravcsik, volume 3, 48–82. Stanford, CA: Stanford University Press.

Hulsey, Sarah, and Uli Sauerland. 2006. Sorting out relative clauses. *Natural Language Semantics* 14:111–137.

Koch, Karsten. 2004. On predicate modification in Nłeʔkepmxcin (Thompson River Salish). In *Papers for the 39th Annual International Conference on Salish and Neighboring Languages*, ed. J.C. Brown and Tyler Peterson, volume 14 of *University of British Columbia Working Papers in Linguistics*, 269–282. Vancouver, BC: UBCWPL.

Koch, Karsten. 2006. Nominal Modification in Nłeʔkepmxcín. In *Papers for the 41st Annual International Conference on Salish and Neighboring Languages*, volume 18 of *University of British Columbia Working Papers in Linguistics*. Vancouver, BC: UBCWPL.

Kroeber, Paul. 1997. Relativization in Thompson River Salish. *Anthropological Linguistics* 39:376–422.

Kroeber, Paul. 1999. *The Salish Language Family: Reconstructing Syntax*. Lincoln, Nebraska: University of Nebraska Press.

Kuipers, Aert H. 1974. *The Shuswap language*. The Hague, Netherlands.: Mouton.

Lyon, John. 2010. Okanagan Demonstratives and their Uses in Story. In *Papers for the 44th Annual International Conference on Salish and Neighboring Languages*, 26–45. UBCWPL.

Lyon, John. 2011. The semantics of determiner phrases in Okanagan. In *Papers for the 46th Annual International Conference on Salish and Neighboring Languages*, volume 30 of *University of British Columbia Working Papers in*

Linguistics, 194–266. UBCWPL.

Lyon, John. in prep. The syntax of Okanagan determiner phrases. Manuscript.

Mattina, Anthony. 1973. Colville Grammatical Structures. Doctoral Dissertation, University of Hawaii.

Mattina, Anthony. 1993. Okanagan Aspect: A Working Paper. In *Papers for the 28th Annual International Conference on Salish and Neighboring Languages*, 233–263.

Mattina, Nancy. 2006. Determiner Phrases in Moses-Columbian Salish. *International Journal of American Linguistics* 72:97–134.

Thompson, James. 2011. Syntactic nominalization in Halkomelem Salish. Doctoral Dissertation, University of British Columbia.

Thompson, L., and T. Thompson. 1992. *The Thompson Language*. University of Montana Occasional Papers in Linguistics. Missoula, MT: University of Montana Occasional Papers in Linguistics.

Vogt, Hans. 1940. *The kalispel language: An outline of the grammar with texts, translations, and dictionary*. Oslo: Norske Videnskap-Akademi.

Willett, Marie Louise. 1996. Some patterns of 'wa' in Nxaʔamxcín (moses-columbia salish). In *Proceedings of the 11th Annual Northwest Linguistics Conference*, 139–149. University of Victoria Working Papers in Linguistics, vol 13.

Willett, Marie Louise. 2003. A Grammatical Sketch of Nxa'amxcin (Moses-Columbia Salish). Doctoral Dissertation, University of Victoria, Victoria, BC.

Relativization in Omagua: The role of pro

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In this paper I analyze a pattern of apparently headless relative clauses that I attribute to pro-drop in Omagua. The language only allows pro-drop in the case of third person objects and only allows headless relative clauses in a limited distribution. I argue that these two facts are expressions of the same restriction, and that headless relative clauses in Omagua are in fact internally headed by a null third person pronoun. This analysis has the benefit of providing coherency to two otherwise irregular patterns, as well as of showing how a given language might utilize its unique resources (in this case pro) to achieve a surface construction which may be achieved differently in other languages. This paper relies crucially on a Minimalist framework, as the Agree operation allows for feature matching between constituents in a derivation in a way that Government and Binding theory does not.

1 Introduction

This paper argues that apparent headless relative clauses in Omagua are in fact internally headed by pro, a null third person pronoun. Support for this claim is found in the distribution of pro in matrix clauses in Omagua, as well as in the subject requirement for non-nominalized clauses in the language.

Under my analysis, pro inherently bears absolutive case, and Omagua has a split-S alignment system, which can only be seen in nominalized clauses, where there is no subject requirement. I show that Omagua relative clauses are internally headed and behave as nominalized clauses. This analysis allows for coherency in Omagua grammar between two otherwise incoherent patterns.

1.1 Language and project background

Omagua is a nearly extinct Tupí-Guaraní contact language spoken in Peru. It is an isolating SVO language. Omagua exhibits nominative accusative alignment, and grammatical relations are encoded by word order so that in unmarked clauses, the subject of a transitive verb and the subject of an intransitive verb both precede the verb whereas the object of a transitive verb follows the verb. There is no morphological case in Omagua.

1.2 Restrictive relativization

Relativization strategies vary from language to language, as do the syntactic analyses these strategies motivate (e.g., Keenan and Comrie 1977 and Vries, 2002). Of particular relevance to Omagua relative clauses are analyses of headless relative clauses and those of internally headed relative clauses (IHRCs), both of which have an extensive literature (e.g., Cole, 1987 and Culy 1990). For the purpose of this paper, I look at restrictive relative clauses in Omagua, though non-restrictive relative clauses appear to be formed in the same manner.

Keenan and Comrie (1977, pp. 63-64) define a restrictive clause as, ‘ ... any syntactic object ... if it specifies a set of objects (perhaps a one-member set) in two steps: a larger set is specified, called the domain of relativization, and then restricted to some subset of which a certain sentence, the restricting sentence, is true. The domain of relativization is expressed in surface structure by the head NP, and the restricting sentence by the restricting clause, which may look more or less like a surface sentence depending on the language.’

Under this understanding of restrictive relative clauses, a relativized NP must first semantically combine with the CP of the restrictive relative clause and then with the D which selects for it from the matrix clause. Since the work of a restrictive relative clause is to pick out an individual from a subset of individuals, the set of individuals cannot be a DP because DPs are already individual denoting (Bhatt, 2001).

1.2.1 Internal structure of internally headed relative clauses

Several proposals for the internal structure of relative clauses have been put forward in the literature. For example, Cole (1987, p. 278) proposes the structures in Figures (1) and (2), for internally headed relative clauses in Imbabura Quechua, where Figure (1) shows the surface structure of such clauses, and Figure (2) the logical structure.

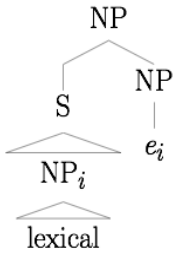


Figure 1: Internally headed relative clause SS (Cole, 1987 p. 278)

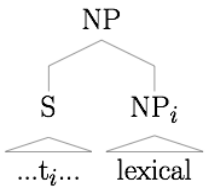


Figure 2: Internally headed relative clause LF (Cole, 1987 p. 278)

Under Cole's analysis of Imbabura Quechua relative clauses, what appear to be internally headed relative clauses are actually externally headed by a null pronoun, which allows Cole to unify a model of relativization for Imbabura Quechua, since the language also has externally headed relative clauses.

Culy (1990) adopts a version of Cole's structure for internally headed relative clauses, but allows coindexing to do the work of covert movement in his structure. Under Culy's analysis, features from the relativized head NP are allowed to percolate up to the clause external null pronoun which selects for the relative clause, and, by virtue of this feature percolation, bears the same index as the clause internal head.

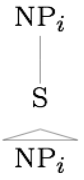


Figure 3: Internally headed relative clause (Culy, 1990 p. 94)

Basilico develops a similar structural analysis to Cole's, but argues that there is no movement out of the relative clause at logical form, and that overt or covert movement of the NP heading the relative clause is clause internal.

The case of Omagua is of particular interest for the LF structure of IHRCs put forward by Basilico since, if my analysis is correct, it is an example of a language which undergoes overt movement at SS rather than covert movement at LF, thus providing support for his analysis.

Following Gutiérrez-Bravo (2010), the values for the parameters which define the internal structure of relative clauses may vary from language to language. Thus, languages vary with respect to the relativization strategies they employ (e.g., gap vs. relative pronoun; external or internal head, etc.), and languages may employ more than one strategy. As such, it logically possibly that each of the different structures that has been put forward in this section could be correct for a particular language, and that the internal structure of a relative clause in Omagua might bear similarities to each these analyses without necessarily matching any one of them completely. In fact, the surface structure I propose for Omagua bears the strongest resemblance to the LF structure proposed by Basilico. However, the null elements I propose are in the spirit of Cole and the co-indexation mechanism I employ is in the spirit of Culy.

1.2.2 Internally headed relative clauses as nominalized clauses

An areal feature of South American languages is the nominalization of relative clauses. In her analysis of relativization in Hup, a Nadehup language of the Vaupés region of the Amazon Basin, Patience Epps states, 'Relative clauses are

identified as nominalizations in many South American languages ... In some languages, headless relatives may be understood as occurring in an appositional relationship to the head noun, and thus are arguably the most basic form of relative clause in the language ... ' I argue Omagua shares this areal feature.

Culy states that internally headed relative clauses are nominalized clauses by definition. He writes, 'A (restrictive) internally headed relative clause is a nominalized sentence which modifies a nominal, overt or not, internal to the sentence (Culy, 1990 p. 27).' However, on this point, it is unclear whether he means that the entire complex DP containing a relative clause behaves as a noun in the matrix clause in the syntax (in which case the same can be accurately said of externally headed relative clauses) or whether he means to say that internally headed relative clauses are nominalized clauses, and as such behave differently from non-nominalized clauses in the grammar.

Under my analysis, both statements are crucially true of Omagua relative clauses. The former is easily demonstrated, as relative clauses in the language can bear NP clitics and appear as verbal arguments in matrix clauses, as shown in (1), where the plural marker, =na (an NP clitic) attaches to the entire relative clause, and this relative clause in turn serves as the subject of the matrix clause. It is not possible for other types of embedded clauses (such as complement clauses) to take similar morphology.

(1) uɾi -saɾi [caɾo nua =may =na] ...
come -FUT car big =REL =PL
'[Big cars *literally,* cars which are big] will come ... '

Less readily demonstrable is the latter statement, though I attempt to distinguish nominalized clauses in Omagua as a class which crucially behaves differently from non-nominalized clauses in the language in terms of a subject requirement which applies to all clauses except ones which have been nominalized. This can be shown by contrasting complement clauses, which bear no dependent morphology, with relative clauses, which obligatorily bear the clausal nominalizer =*may*. Examples (2a) and (2b) show that a complement clause must have a phonologically overt subject, where examples (3a) and (3b) show that this is not the case for relative clauses.

(2) a. ɾana sɪta ɾa chunani
3pl want 3sg be.small
'They want him to be small.'

b. *ɾana sɪta Ø chunani
3pl want 3sg be.small
'They want him to be small.'

(3) a. akia chunani =may yapana ɪɾaya
3sg be.small =REL run well
'The one who is small runs well.'

b. Ø chunani =may yapana ɪɾaya
3sg be.small =REL run well
'The one who is small runs well.'

I suggest that the crucial difference between these clause types is that relative clauses are nominalized clauses, which allows them to be treated specially in the syntax.

2 Omagua relativization

Omagua marks relative clauses with the clausal nominalizer =may, which attaches to the the verb of the relative clause, as shown in the subject relativization in (4).

(4) [yapisaɾa yapana =may] usu kamata =taɾa
man run =REL go work =PURP
'[The man who ran] is going in order to work.'

Relative clauses in Omagua may be headed or headless. However, headless relative clauses may not appear targeting all argument positions. Omagua shows a syntactic pocket of split ergativity in its relativizations, where subject relativizations of active intransitive verbs and subject relativizations of transitive verbs may not be headless, but subject relativizations of stative intransitive verbs and of object relativizations may be headless, so that (5a), a headless subject relativization of an activity verb is ungrammatical, but (5b) and (5c), a subject relativization of a stative intransitive and an object relativization, respectively, are grammatical.

(5) a. *[Ø yapana =may] ɪu panaɾa =kana
pro run =REL eat banana =PL
'[The one who runs] eats bananas.'

b. [Ø tʃunani =may] =mukwi ta usu uka =kati
pro be.small =REL =COMM 1SG go house =allative
'With [(the one) who is small], I go to the house.'

c. [ɾa kumɪsa =may] ipu -pa aisɪ

3sg say =REL sound -PERF ugly
'[That which he said] sounded ugly.'

Moreover, headless relative clauses may only appear when the target of relativization is third person, as is the case with pro-drop.

3 Omagua pro-drop

Overt phonological realization 3rd person pronominal objects in Omagua is optional in matrix clauses, as shown in examples (6)-(9).

(6) ɪnɪ puɾaɾa -usu -pa Ø/ɾana sani
2sg find -fut -perf pro/3pl soon
'You will find (them) soon.'

Example (7) shows that it is third person matrix objects only and not 3rd person matrix subjects which may be dropped, since in this example, an antecedent is equally close for both of the third person arguments in the second clause, but a subject argument is overtly expressed while the object one is dropped.

(7) ɾa tɨkɨta ɾa yawaɾa ɾa iʃaɾi -pa Ø
3sg tie 3sg dog 3sg leave -perf pro
'He tied up his dog. He left (him).'
*' … (He) left him.'

In order for an object to be grammatically dropped, it must first be introduced so that the antecedent of the dropped pronoun is recoverable, as shown in example (8), where a full DP referent is introduced in the first clause, reduced to a lexical pronoun in the second, and dropped in the third. This pattern fits with the generalization that pro-drop that appears in languages without overt verbal argument agreement should do so only as an anaphoric dependency where a sufficiently local antecedent is recoverable for the dropped pronoun (Keller, et. al, 1999).

(8) tana yapiʃikia ɾana iwasu ɾana ipuraka muɾa
1pl.excl.ms grab 3pl.ms paiche 3pl.ms make 3sg.ms

ɾana tɪwɪ -ta muɾa upa ɾasuy ɾana
3pl.ms salt -caus 3ms.sg all then 3pl.ms

ikiana -ta Ø kwaraʃi saku =kati
be.dry caus pro sun be.hot =loc

'We would grab their paiche, they'd make it, they'd salt the whole thing. Then, they'd dry (it) in the hot sun.'

Matrix subject arguments must be expressed for both stative and active verbs, as shown by the ungrammaticality of (10) and (11). The ungrammaticality of (10) and (11) can be contrasted with the grammaticality of (9) to show that matrix subject drop is not possible in the language, but matrix object drop is.

(9) ta sɪta yatɨma sandia =na ta pɪɾɪpɪ -ta
1sg.ms want plant watermelon =pl.ms 1sg.ms buy -caus

Ø =sɪnuni
pro =purp
'I want to plant watermelons so I can sell (them).'

There are no dropped third person subjects of stative verbs in matrix clauses in Omagua. I attribute this to a subject requirement in Omagua which is not present for nominalized clauses in the language.

(10) *Ø yapana
pro run
'he/she/it/etc. run(s).'

(11) Ø tʃunani
pro be.small
'he/she/it/etc. is small.'

Table (1) summarizes the pattern expressed in Omagua with respect to argument realization in matrix and dependent clauses.

Table 1.

	RC drop	**Matrix drop**	**Comp clause drop**
Object	Yes	Yes	yes
Intransitive stative subject	Yes	No	no
Intransitive active subject	No	No	no
Transitive subject	No	No	no

4 A feature based analysis of Omagua relative clauses

As demonstrated above, Omagua exhibits a typologically interesting pattern of relativization where object relativizations and subject relativizations of stative intransitive verbs may optionally appear headlessly and subject relativizations of other verbs may not.

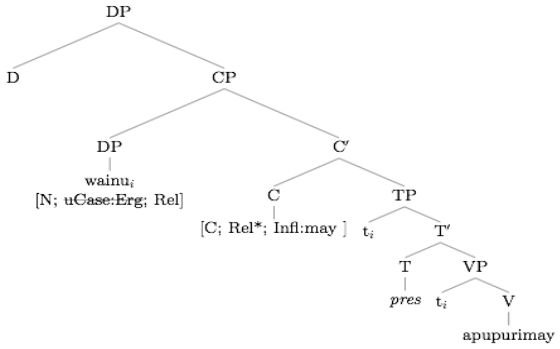
I propose that this distribution is attributable to the distribution of the null pronoun which allows for object dropping (but not subject dropping) in Omagua, and that the same null pronoun that's dropped in matrix clauses is dropped in relative clauses because this null pronoun inherently bears absolutive case so that it may not appear in a configuration where it should receive ergative case. Crucial to this assumption is the Minimalist operation Agree, which allows for a case matching configuration where DPs in Omagua may be endowed with case in the numeration and verbs in Omagua select for nouns with given case properties. Under Government and Binding theory, this assumption wouldn't hold, since feature matching does not exist in this framework.

With this in mind, I am proposing that both headed and 'headless' relative clauses are in fact internally headed and that headless relative clauses are headed by the null pronoun. Following this, relativized nouns must be merged in the relative clause where they receive case and theta role assignment. Under my analysis, the matrix verb selects for a DP complement. The head D of this complement (in addition to being null) selects for a CP complement, and is co-indexed with the clause internal DP which serves as the head of the relative clause. Relative clauses are a special clause type whose C bears a strong unchecked relativization feature, which triggers a Move operation that pulls the relevant head noun to spec CP.

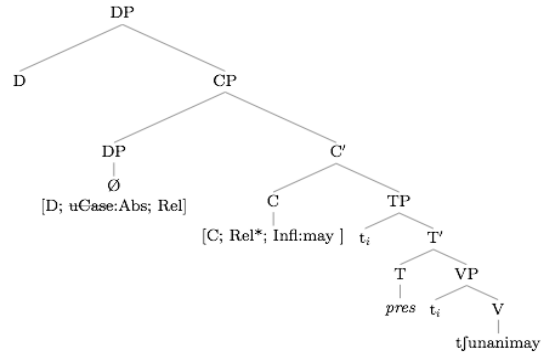
This analysis posits two uninterpretable inflectional features for any verb so that both C and T contain interpretable inflectional features (both of which may be null given that tense and aspect are most frequently unmarked and that

declarative clauses have no clausal agreement) that value V. This allows for the clausal nominalizer *=may* to appear via Agree in relative clauses and other nominalized clauses, and for null clause type agreement to appear in matrix and complement clauses.

Thus, the relevant features for the null pronoun are [N, uCase:abs], where the valued case feature on the pronoun must match the case feature of the verb which selects it. The relevant features of C are [CT:Rel infl:may uT uRel*]. The uRel* feature on C is responsible for pulling the relativized noun up to spec-CP. The valued uninterpretable case feature on the null pronoun prevents the null pronoun from appearing anywhere it couldn't express absolutive case.



wainu apupuɾimay, 'woman who cooks'



tʃunanimay, '(the one) who is small'

Following this, the pattern of relative clauses in Omagua is correctly predicted, and both headed and headless relative clauses are constructed in the same manner.

5 Conclusions and further issues

Omagua is typologically interesting in that it can be shown to have internally headed relative clauses through the distribution of its null third person pronoun. Syntactically restricting this pronoun to appear only with absolutive case allows for the correct prediction of Omagua's pattern of relativization.

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References

Basilico, David (1996). Head Position and Internally Headed Relative Clauses. Language 72(3):498-532.

Bhatt, Rajesh (2001). The Raising Analysis of Relative Clauses: Evidence from Adjectival Modi!cation. Natural Language Semantics 10(1):43–90.

Borsley, R. D. (1997). Relative clauses and the theory of phrase structure. Linguistic Inquiry.

Caponigro, Ivano (2003). Free Not to Ask: On the Semantics of Free Relatives and Wh-words Crosslinguistically. PhD Dissertation, UCLA.

Cole, Peter (1987). The Structure of Internally Headed Relative Clauses NLLT 5(2):277-302.

Culy, Christopher (1990). The syntax and semantics of internally headed relative clauses. PhD Dissertation, Stanford.

Epps, Patience (2009). Escape from the noun phrase: From relative clause to converb and beyond in an Amazonian language.*Diachronica.*

Gutiérrez-Bravo, R. & J. Monforte (2009). Focus, agent focus and relative clauses in Yucatec Maya. in*New Perspectives on Mayan Linguistics*, H. Avelino,J. Coon, & E. Norcli"e (eds.), MIT Working Papers in Linguistics.

Huanaquiri, A (2004). Omagua story notebooks.

Keenan, Edward and Bernard Comrie (1977). Noun Phrase Accessibility and Universal Grammar. LI 8(1):63-99.

Keller, Frank, and MariaLapata (1999). Object drop and discourse accessibility. WCCFL 17: 362-74.

Moore, Denny (1989). Gavião nominalizations as relative clause and sentential complement equivalents. International Journal of American Linguistics 55(3):309-325.

Nordho, Sebastian (2004). Stative Verbs and Possession in Guarani. Syntax of the World's Languages Conference.

Stark, Tammy (2010). Fieldnotes.

Vallejos, Rosa (Forthcoming). *A Grammar of Kokoma-Kokamilla*. PhD dissertation, University of Oregon.

Vries, M. de (2002). *The Syntax of Relativization.* PhD Dissertation, University of Amsterdam. Published by LOT, Utrecht.

Scottish Gaelic prepositional relatives: The problem of inflection

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Scottish Gaelic, a Celtic language spoken mainly in the western islands of Scotland, has two patterns of relativization on prepositional complements: a pied-piping pattern and a stranding one. The pied-piping pattern involves the relative complementizer *an*. *An* forces fronting of the preposition, which then appears with definite inflection. The stranding pattern involves the main relative complementizer *a*, which requires the preposition to remain *in situ* with 3MSG inflection. This paper analyzes the pied-piping pattern, assuming Adger and Ramchand (2005)'s static Agree analysis for the stranding one. I propose that the pied-piping pattern involves a relative operator and movement. The relative operator is not null, but identical with the definite article (following Arregi 2000 for Spanish) with the exception of a [REL] feature which triggers movement to spec,CP. I term this combination of features the Definite Operator. Under this account, Scottish Gaelic is not so different from other Indo-European languages like Spanish and German in its use of the definite article in forming relative clauses. Unlike Spanish and German, Scottish Gaelic requires deletion of the definite operator, with the result that it is detectable only in the definite inflection on the pied-piped preposition.

1 Introduction

In relativizing on the complement of a preposition, Scottish Gaelic has two patterns: a pied-piping and a stranding one. When the preposition is pied-piped, it precedes the relative complementizer *an* and takes definite inflection (1). When the preposition is stranded, it appears *in situ* and takes default 3MSG[1] inflection (2). In the glosses, I refer to the relative complementizer which is preceded by the preposition as AN and the relative complementizer which allows the preposition to be stranded as A.

[1] I use the following abbreviations: 1,2,3: *first, second and third person*, M: *masculine*, F: *feminine*, SG: *singular*, PL: *plural*, DEF: *definite*, GEN: *genitive*, EMPH: *emphatic*, DEP: *dependent*, IND: *independent*, REL: *relative*, VN: *verbal noun*, COP: *copula*, ASP: *aspect marker*, NEG: *negation*, PRES: *present*, PAST: *past*, FUT: *future*.

(1) [PIED-PIPING]
gloinne **anns** an do dhoirt thu am bainne ____
glass in.DEF AN pour.PAST.DEP you the milk
'a glass into which you poured the milk' (Andrew Dunn, p.c.)

(2) [STRANDING]
am bòrd a bha an leabhar **fodha** ____
the table A be.PAST.IND the book under.3MSG
'the table the book is under' (Adger & Ramchand 2006: 10)

The patterns illustrated in (1) and (2) differ in three ways. The first is in word order: in (1) the preposition precedes the complementizer, but in (2) the preposition appears *in situ*, at the end of the clause. Secondly, (1) and (2) differ in the form of the complementizer and in the effect on the form of the verb: *an* triggers the dependent form of the verb, while *a* triggers the independent form. The independent form of the verb is used in matrix clauses and when the verb is preceded by either *ma* 'if' or the relative complementizer *a*. The dependent form of the verb is triggered by matrix and embedded negation, *cha* and *nach*, *mur* 'if not', the plain embedding complementizer *gun*, the positive and negative interrogative particles *an* and *nach*, and the relative complementizer *an*. The third difference between the patterns in (1) and (2) is in the inflection on the preposition. The pied-piped preposition takes definite inflection but the stranded preposition takes 3MSG inflection, which is the default in Scottish Gaelic (Adger and Ramchand 2005: 177).

Adger and Ramchand (2005) argue that the relative clause is the basic Ā-dependency in Scottish Gaelic, out of which clefts and *wh*-questions are built up. The pied-piping pattern can be used in all Ā-dependencies as well: relative clauses (3a), clefts (3b) and *wh*-questions (3c). The pied-piped prepositions *air* in (3b) and *aig* in (3c) have homophonous definite and bare forms. Notice, however, that these preposition still precede the relative complementizer *a(m)*, identifiable in (3b) from the dependent form of the verb.

(3) a. agus an duine eile 'g a tilgeil a mach gu àite [anns
and the man other PTCL 3FSG throw.VN out to place in.DEF
an tiormaich i]
AN dry.FUT she
'and the other throwing it out, to a place where it [the peat] will dry'
(Oftedal 1956: 271)

b. 'S e Christine [air __ a bheil an droch *luck*]

COP AUG Christine on AN be.PRES.DEP the bad luck
'It's Christine that has bad luck' (Andrew Dunn, p.c.)

c. Co aig am bheil an t-airgiod?
who at AN be.PRES.DEP the money
'Who has the money'? (MacLaren 1999: 114)

An analysis of the pied-piping pattern must account for the variation in word order, in the form of the complementizer and in the inflection on the preposition, as well as the fact that, unlike Modern Irish (McCloskey 2002: 214), the pied-piping pattern in Scottish Gaelic appears to be syntactically productive.

2 A prior analysis of the stranding strategy: Adger and Ramchand (2005)

Adger and Ramchand (2005) provide an elegant account of the stranding pattern in (2) above based on a static Ā-dependency between the relative complementizer *a* and a φ-featureless *pro* variable at the foot of the dependency. The semantic needs of relative clauses are expressed in the syntactic features [Λ], which expresses predicate abstraction, and [ID], which represents a bound variable. Under this analysis, Scottish Gaelic falls into the category of a Merge language which bundles the [Λ] and [ID] features on two separate items, the relative complementizer *a* and *pro*, respectively. (4) illustrates this dependency, which requries the valuation of the [ID:] feature on *pro* by the [ID:dep] feature on the relative complementizer.

(4) SCOTTISH GAELIC
$[_{CP}$ *a* [C,Λ, ID:dep] ... $[_{PP}$ P *pro*[ID:]]] → $[_{CP}$ *a* [C,Λ, ID:dep] ... $[_{PP}$ P *pro*[ID:dep]]]

English, on the other hand, is a Move language which bundles those same features on a single lexical item, for instance the relative pronoun *which*. Movement is then required to create two instantiations of that lexical item, and the higher copy abstracts over the lower one.

(5) ENGLISH
$[_{CP}$ C ... *wh* [Λ, ID:ϕ]] → $[_{CP}$ *wh* [Λ, ID:ϕ] C ... <*wh* [Λ, ID:ϕ]>]

The fact that Scottish Gaelic is a Merge, rather than a Move, language finds support in the non-identity effects of its Ā-dependencies which demonstrate that the head of the relative clause (hereafter the pivot) cannot have been base-generated internal to the relative clause. The first non-identity effect is that of

selection mismatches, such that the pivot *tidsear* in (6a) cannot be replaced in the gapped position (cf. 6b).

(6) a. Dè an seòrsa tidsear a tha annad?
what the sort teacher A be.PRES.IND in.2SG
'What sort of teacher are you?'
(Adger and Ramchand 2005: 167)

b. *Tha tidsear math annad.
be.PRES.IND teacher good in.2SG
'You are a good teacher'
(Adger and Ramchand 2005: 168)

The second non-identity effect is that of agreement: the inflection on the preposition is 3MSG regardless of the properties of the pivot (7). Scottish Gaelic agreement is such that φ-inflection is found only with null *pro*, and the pivot *am bocsa* would normally trigger the definite form of the preposition, *anns*. The appearance of 3MSG inflection on the stranded preposition is insensitive to the features of the pivot.

(7) Dè am bocsa a chuir thu am peann ann?
which the box A put.PAST.IND you the pen in.3MSG
'Which box did you put the pen in?'
(Adger and Ramchand 2005: 169)

The third non-identity effect is also illustrated in (7), in that the case of the pivot does not reflect the case it would receive *in situ*. In (7) *am bocsa* is in the nominative case, but as an object of a preposition it would normally be in the dative case: *a'bhocsa*.

The fourth non-identity effect is that Scottish Gaelic idioms do not retain their idiomatic readings when one part is relativized on (8).

(8) a. Bidh e a'toirt sop às gach seid
be.FUT.IND he take.VN wisp from.DEF each bundle
'He's not a very concentrated or focused person'

b. 'S ann às gach seid a bhitheas e a'toirt sop
COP AUG from.DEF each bundle A be.FUT.RELhe take.VN wisp
unavailable reading: 'He tries his hand at *everything*'
OK as: 'It's from every bundle that he has taken a wisp'
(Adger and Ramchand 2005: 169-170)

The final non-identity effect has to do with Condition C reconstruction effects. A relativized pronoun cannot be coindexed with an R-expression in the relative clause (9). This is completely unexpected if Scottish Gaelic relative clauses were formed via movement.

(9) ‘S toil leam am peann aige ge-tà a bha Iain
COP pleasing with.1SG the pen at.3MSG however A be.PAST I.
a’sgriobhadh leis
write.VN with.3MSG
‘I like his pen that Iain was writing with’
**his=Iain’s*, OK otherwise (Adger and Ramchand 2005: 170)

Because Scottish Gaelic Ā-dependencies are not formed via movement but by base-generation of the pivot, Adger and Ramchand’s (2005) analysis accounts neatly for the observed non-identity effects. Their analysis also provides an explanation for the characteristics of the stranding pattern in (2) above. Because the dependency is created by an Agree relation rather than movement, the preposition remains *in situ*. The form of the complementizer *a* corresponds to the bundling of the features [Λ] and [ID]. The special relativizing *pro* triggers the default 3MSG inflection on the preposition.

However, this analysis does not readily extend to the pied-piping pattern in (1) above. The preposition in (1) has definite inflection, not 3MSG, indicating a difference in the derivation of the two structures. A single item does not typically trigger two different types of inflection, and null elements are assumed to be unable to pied-pipe additional material (cf. Chomsky 1982). Additionally, the fact that the preposition precedes the relative complementizer strongly suggests that movement is involved. Another analysis is needed. I propose an analysis of the pied-piping pattern in (1) which will supplement Adger and Ramchand’s (2005) analysis of the stranding pattern in (2).

3 A definite operator analysis of the pied-piping pattern

While it seems that the pied-piping pattern in (1) above involves movement of the preposition, it does not appear to involve movement of the pivot. That is, I assume that the pivot is base-generated external to the relative clause, as Adger and Ramchand (2005) propose for the stranding pattern. Of the non-identity effects outlined above, the pied-piping pattern behaves similarly at least with regard to agreement and case. Compare (10) with (7) above in the shows an indefinite pivot *àite* which triggers no inflection on the matrix preposition *gu*. The pied-piped preposition *anns* in the relative clause, however, is inflected for definiteness.

(10) agus an duine eile ‘g a tilgeil a mach gu àite [anns an
and the man other PTCL 3FSG throw.VN out to place in.DEF AN
tiormaich i]
dry.FUT she
‘and the other throwing it out, to a place where it [the peat] will dry’
(Oftedal 1956: 271)

Assuming the other non-identity effects hold for the pied-piping pattern (although further empirical work is required to verify this), I conclude that the pivot is base-generated external to the relative clause.

Arregi (2000) proposes that Spanish uses the definite article in forming relative clauses because of the requirements on interpretations of copies[2]. Basically, assuming the copy theory of movement and particularly that the lower copy of a moved item must be interpreted as a definite description, and additionally assuming the identity condition on the deletion of higher copies of moved items, the definite article is the best option for realizing the relative operator because its lower copy, the one to be interpreted, is identical to the higher one without any additional manipulations or assumptions.

I propose that Scottish Gaelic is not so different from Spanish in using the definite article as a relative operator, except that Scottish Gaelic deletes the definite article after it triggers inflection on the preposition. Additionally, because Scottish Gaelic base-generates the pivot in the matrix clause (recall the non-identity effects discussed above) we require a null NP to occupy the gap in the complement position of this definite operator. This null NP is independently required for pronouns, if we assume with Déchaine and Wiltschko (2002) a complex pronominal structure like that in (11).

(11) $[_{DP}\ \varphi\ [_{NP}\ \emptyset]]$

This same null NP is available for selection by the definite operator, which I gloss as THE[REL] for convenience.

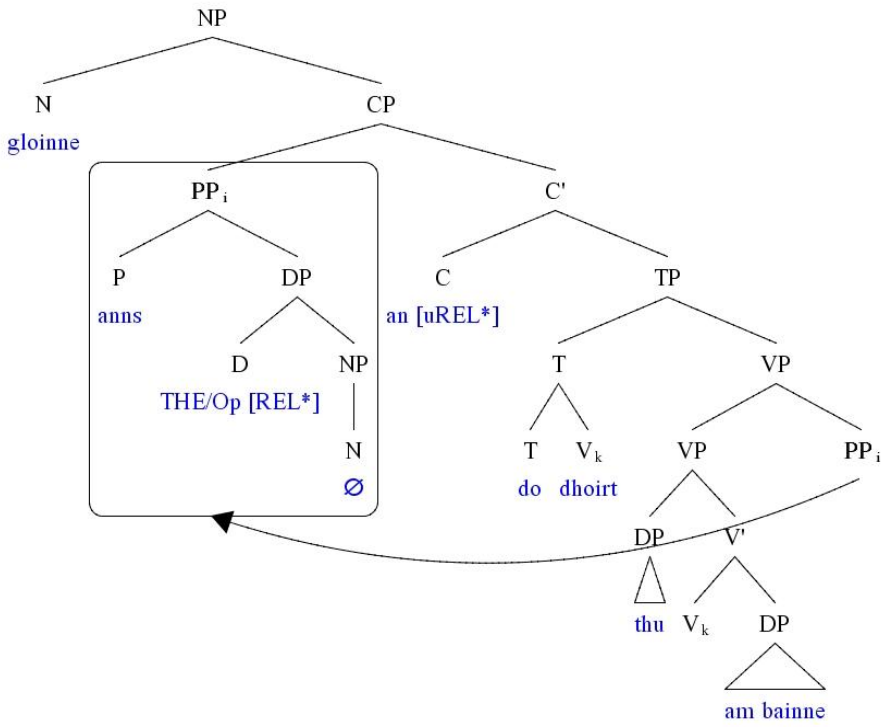
(12) $[_{DP}$ THE[REL] $[_{NP}\ \emptyset]]$

[2] The use of definite articles in relative clauses has been previously commented on in the literature. For Spanish, Brucart (1992) proposes that the definite article takes a null relative operator as its complement. Hebrew participial relatives use what looks like a determiner, which Siloni (1995) analyzes as being a definite article acting as a relative complementizer. Brucart’s (1992) analysis could be adopted for the pied-piping pattern with little change. As for Siloni’s (1992) analysis, however, the fact that the negative complementizer *nach* also appears in the pied-piping pattern rules hers out for Scottish Gaelic.

The relative complementizer *an* has a strong uninterpretable [uREL*] feature which requires movement of the definite operator possessing a [REL] feature into its specifier for checking. The preposition is pied-piped along with the definite operator.

The definite inflection found on the pied-piped preposition is triggered by the definite operator, just as the definite article triggers inflection on the preposition. Crucially, the processes giving rise to definite inflection must occur before the post-syntactic deletion of the definite operator. Whether these processes occur at syntax or at a post-syntactic component of the derivation is left for further research. The deletion of the definite operator may be due to the fact that Scottish Gaelic does not allow NP ellipsis as freely as, for instance, German and may therefore disallow pronunciation of a definite article with no contentful nominal complement.

(13)



The three properties of the pied-piping pattern in (1) above are explained by this analysis. The word order is a consequence of the need of the definite operator to move to the specifier of CP, triggered by the strong [uREL*] feature

on the complementizer. The preposition is pied-piped along with the definite operator. The form of the complementizer reflects a different set of features from that of the other relative complementizer. The pied-piping complementizer *an* has a strong uninterpretable [uREL*] which requires movement of a matching feature into its specifier. The stranding complementizer *a* has the features [Λ] and [ID:dep] which, under slightly different assumptions of feature-checking requirements, must enter into an Agree relation with a *pro* with an unvalued [ID:] feature. The inflection on the preposition falls out straightforwardly from the type of element which is in the complement of the preposition. The definite operator which triggers movement triggers the definite inflection found on the pied-piped preposition in exactly the same way as the definite article does. The *pro* found in the stranding pattern, similarly, triggers φ-feature inflection on the preposition by virtue of its being a pronominal element.

4 Consequences

In this section I discuss various consequences and implications of the definite operator analysis. This analysis has the positive consequence of unifying the category of the trigger of definite inflection. Additionally, there appears to be further support for the distinction between the movement relative complementizer *an* and the non-movement relative complementizer *a* in the form of gapless relatives. Finally, the analysis of the pied-piping pattern has some implications for the Merge versus Move typology of Adger and Ramchand (2005).

Under the definite operator analysis, definite inflection on the pied-piped preposition now fits in with the distribution of definite inflection elsewhere in Scottish Gaelic. The overt elements in (14) are all apparent triggers for definite inflection on the preceding preposition (Robinson 2008: 139).

(14) a. the singular definite article *a'* or *an*
b. the plural definite article *na*
c. *gach* 'each, every'
d. *dè* 'what,which'
e. the relative complementizers, both positive and negative: *an* and *nach*

Under the analysis proposed here, the relative complementizers in (14e) are only apparent triggers. Under the analysis proposed here, the preposition is pied-piped because these complementizers require the definite operator to move into their specifier and it is this definite operator which triggers the inflection on the preposition. (15) lists the actual elements which trigger definite inflection when the definite operator analysis is adopted.

(15) a. the singular definite article *a'* or *an*
b. the plural definite article *na*
c. *gach* 'each, every'
d. *dè* 'what,which'
e. the definite operator

As a definite Dº head, the definite operator fits the profile of a trigger for definite inflection. Further support for the definite operator being the definite article augmented by a [REL*] feature comes from the fact that while all prepositions inflect for singular definite article (15a), not all inflect for the triggers in (15b-d) (Robinson 2008: 20-23). All pied-piped prepositions inflect for definiteness, suggesting that the definite operator shares more in common with the singular definite article than the other definite Dº heads in (15).

The distinction between *an* as a movement relative complementizer and *a* as a non-movement relative complementizer finds support in the fact that *a* is used in gapless relatives, which do not appear to involve movement at all.

(16) a. 'S ann a bha an droch *luck* orm
COP in.3MSG A be.PRES.IND the bad luck on.1SG
'I have bad luck'

b. *'S ann an robh an droch *luck* orm
`COP in.3MSG AN be.PAST.DEP the bad luck on.1SG
(Andrew Dunn, p.c.)

Of course, *a* is also the main relative complementizer, used when relativizing on subject and non-prepositional objects as well as in the stranding pattern. However, the ungrammaticality of using *an* supports the idea that *an* requires movement.

Recall that Adger and Ramchand (2005) argue that Scottish Gaelic differs from languages like English in being a Merge language which forms its Ā-dependencies not by movement but by base-generation of the component parts of the dependency. Under the definite operator account of the pied-piping pattern of relativization, Scottish Gaelic employs both strategies in forming its Ā-dependencies. This is in fact a possibility for Adger and Ramchand:

> "[I]n principle, all languages have the potential to use both Merge and Move to establish relative dependencies: languages may, however, differ in where they deploy each strategy"
> (Adger and Ramchand 2005: 191)

Perhaps more interesting than Scottish Gaelic being both a Merge and a Move language is the variation among dialects in the use of the Merge

('stranding') or the Move ('pied-piping') strategy, as illustrated in Adger and Ramchand's (2006) dialect survey. For speakers of the Lewis dialect, the Move strategy is the only one available for prepositional objects, and the Merge strategy is the only one available for all other relativizable positions. For speakers of the Skye dialect, on the other hand, the Merge strategy is the most widely available, with the Move strategy available only for prepositional arguments. Why the pied-piping strategy is allowed only with prepositional arguments in the Skye dialect (although the stranding option is possible as well), is an intriguing fact that must be left for further research.

5 Conclusion

In this paper I have proposed that the pied-piping pattern of Scottish Gaelic prepositional relatives is due to the movement of a relative operator which is identical to the definite article apart from the [REL] feature which allows movement. This analysis easily accounts for the inflection found on the pied-piped preposition as well as the word order. The form of the movement relative complementizer *an* reflects its unique feature bundle [C,uREL*], as opposed to the other relative complementizer, which, following Adger and Ramchand (2005), involve no movement at all.

Further research must be done and more data collected regarding variable binding effects, which are expected under the definite operator account, and regarding the three other non-identity effects: selection mismatches, idiomatic readings, and Condition C reconstruction effects.

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References

Adger, D. & Ramchand, G. (2006). Dialect Variation in Scottish Gaelic Relative Clauses. In *Rannsachadh na Gàidhlig*, ed. W. McLeod, 1-15. Edinburgh: Dunedin Academic Press.

——. (2005). Merge and Move: *Wh*-Dependencies Revisited. *Linguistic Inquiry 36*: 161-193.

Arregi, K. (2000). Definite Articles as Relative Operators. ms., Massachusetts Institute of Technology.

Brucart, J. (1992). Some Asymmetries in the Functioning of Relative Clauses in Spanish. *Catalan Working Papers in Linguistics 2*: 113-143.

Chomsy, N. (1982). *Some Concepts and Consequences of the Theory of Government and Binding*. Cambridge, Mass.: MIT Press.

Déchaine, R. & Wiltschko, M. (2002). Decomposing Pronouns. *Linguistic Inquiry 33*: 409-442.

MacLaren, J. (1999). *Beginner's Gaelic*. New York: Hippocrene Books, Inc.

Oftedal, M. (1956). *A Linguistic Survey of the Dialects of Scotland* vol. 3: The Gaelic of Leurbost, Isle of Lewis. In *Norsk Tidsskrift for Sprogvidenskap*. Oslo: Aschehoug.

Robinson, C. (2008). Agreement in Scottish Gaelic: A Distributed Morphology Analysis. Masters of Literature thesis, University College Dublin.

Siloni, T. (1995). On Participial Relatives and Complementizer D^{o}: A case study in Hebrew and French. *Natural Language and Linguistic Theory 13(3)*: 445-487.

Subject-verb agreement in English relative clauses: Using speech errors and psycholinguistic approaches to distinguish between syntactic representations

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The analysis presented here makes use of agreement speech errors to address the question of which syntactic representations of relative clause structures are appropriate for the psycholinguistic production of the local dependency between subjects and verbs. If agreement is a strictly syntactic process, and such errors only occur as a result of interference between the copying of syntactic number from the subject to the verb, a Government and Binding representation is plausible. Such a theoretical representation suggests specific feature-copying relationships between head nominals, relative pronouns and traces. If, however, agreement in the cases of these errors is semantic, then a Head-driven Phrase Structure Grammar representation of relative clauses may be more appropriate for psycholinguistic accounts. Directions for future research are suggested.

1 Introduction

Understanding how speakers process relative clauses has long been a goal of research in language processing. To accomplish this, it is necessary to make explicit the assumptions about the syntactic representations that speakers are drawing upon when they produce and comprehend these long-distance dependencies. Much research on relative clauses focuses exclusively on behavioural measures of how speakers process the head nominal and the gap within the relative clause; yet these two elements can be involved in other local dependencies, such as subject-verb agreement relations. This study suggests that by examining subject-verb agreement speech errors, we may be able to learn about the syntactic representations that speakers are drawing upon when producing utterances containing relative clauses.

A search of the Switchboard Corpus (Godfrey, Holliman & McDaniel 1992) yields a wide array of speech errors involving subject-verb agreement.

Some of those errors occur inside the relative clause, as in (1), and some occur outside the relative clause, as in (2).

(1) a. And in this country, uh, **the solution** that, that people seem to think ____ **work are** unacceptable.
b. And you know, it, uh, it kind of knocks down **two** of the big risk categories for coronary artery disease which ___ **is**, uh, uh, low cardiovascular fitness, and also, uh, you know, the cholesterol.
c. Uh, I guess **the other thing was** that ___ **are** causing a lot of the crime now is the decrease in values.
d. They may be able to, to give **the resources** that ___**'s** needed to, uh, to do a good job.
e. I'm not sure if we know what to do in terms of curing **some** who ___ **has** already gotten polio.

(2) a. Well, and, uh, you know, **one thing** my wife and I've talked about __, **i-, are,** uh, private schools.
b. Oh, **one thing** I thought about ___ the other day **were** batteries.
c. So really **the only bills** I have ___ **is** rent, utilities, insurance you know.

Assuming that producing subject-verb agreement involves drawing upon syntactic representations, I will address the question: what are the most appropriate representations for the process of language production?

Following a brief overview of psycholinguistic models of language production and psycholinguistic research on subject-verb agreement production, this study will examine the step-by-step process of producing a few of these speech errors assuming two syntactic representations of relative clauses: a classic Government and Binding (GB) representation and a Head-driven Phrase Structure (HPSG) representation. Problems that arise with each account will be illustrated, and future directions will be outlined.

2 Background

2.1 Psycholinguistic models of language production

Almost all psycholinguistic models of language production assume three basic stages for producing an utterance (Garrett 1975; Levelt 1989). The first stage is the message or conceptual stage, which in linguistic terms may be thought of as the stage during which semantic information is processed. The second stage is grammatical encoding, during which words and morphemes are accessed and fit into a syntactic structure for the utterance. During the third stage, morphophonological information is accessed and a phonetic plan is constructed.

While models vary with respect to modularity (that is, how encapsulated information is at each stage), they all assume that language production is incremental. The entire utterance does not have to be processed at each stage before information is passed on to the next stage. Incremental production becomes relevant in this study because it implies that a subject head noun may be grammatically encoded before, for example, a modifying relative clause is grammatically encoded; if agreement is a syntactic process, then the incremental update of information from the relative clause may have some effect on updating the number value of the modified subject head noun.

2.2 Psycholinguistic research on subject-verb agreement production

Much psycholinguistic research on subject-verb agreement concerns errors or mismatch between the subject and verb agreement features. This work is done under the premise that we can learn more about language production by investigating what types of information (i.e., semantic or syntactic) interfere with agreement, and under what structural conditions that interference occurs.

The most commonly study interference case of interference in subject-verb agreement is *attraction*, in which the verb agrees with a 'local' noun embedded in the subject noun phrase (e.g. *cabinets* in *The key to the cabinets ARE…)* (Bock & Miller 1991). Generally, such errors are said to occur when local nouns pass their features up the tree to the subject head noun, which then passes its number feature to the verb. Attractors do not directly influence verb agreement morphology, but interfere indirectly by affecting the number value of the subject noun. Importantly, local nouns that are hierarchically closer to the head noun have been shown to be more likely to cause attraction errors than nouns that are closer in linear distance to the verb (Vigliocco & Nicol, 1998; Franck, Vigliocco, & Nicol, 2002). For example, *presidents* in *The threat to the presidents of the company…* is more likely to result in an erroneous plural verb than *companies* in *The threat to the president of the companies*. Finally, only syntactic properties of local nouns cause attraction; semantic number does not (Bock et al. 2001).

However, it is not the case that semantic information does not matter at all. While semantic properties of local nouns do not seem to affect the subject-verb agreement relation, the semantic properties of the head noun (separate from its syntactic marking of number) do influence agreement patterns. For example, subjects with a distributive reading (e.g., *The label on the bottles…* where the head noun is syntactically singular but conceptually plural) have higher rates of plural agreement over and above singular nouns modified by prepositional phrases containing plural local nouns (e.g., *The baby on the blankets*.) Higher incidents of plural agreement are also seen with collective subjects (e.g., gang, family, faculty), which may be simultaneously conceptualized as single units composed of multiple individuals. (Bock et al, 2006; Humphreys & Bock, 2005;

Vigliocco, Butterworth, & Semenza, 1995)

Psycholinguistic accounts of agreement production differ with respect to the role that syntactic structure and semantic properties play during the production process. In the Marking & Morphing model of agreement (Eberhard, Cutting, & Bock 2005), agreement is a syntactic process. Number features of the subject noun and local nouns are passed through the syntactic structure to the verb. In another psycholinguistic account, the Maximal Input/Unification model, the conceptual representation supplies the agreement information (Vigliocco & Hartsuiker, 2002; Franck, Vigliocco, & Nicol, 2002); the verb has direct access to the semantic properties of the verb. To some extent, these models correlate with linguistic theories of syntax, such that it is reasonable to say that syntactic theories correlating with these models may offer a representational foundation for grammatical encoding during language production.

3 Examining agreement errors in relative clause production

The first syntactic approach through which these speech errors will be examined is the traditional GB approach. Most psycholinguistic research has assumed basic GB representations, without necessarily being concerned about particular operations or transformations. Transformation-based approaches are however compatible with modular accounts of agreement production (Bock et al. 2006).

Consider the utterance, *The solution that people seem to think work are unacceptable*. The error here concerns the mismatch between the singular head solution and the main clause verb are, as well as the plural verb in the relative clause work. A reasonable source for the plural marking on the verb could be the local noun people. Assuming that this is the case, consider the steps that it would take to produce this error, using the illustration in Figure 1.

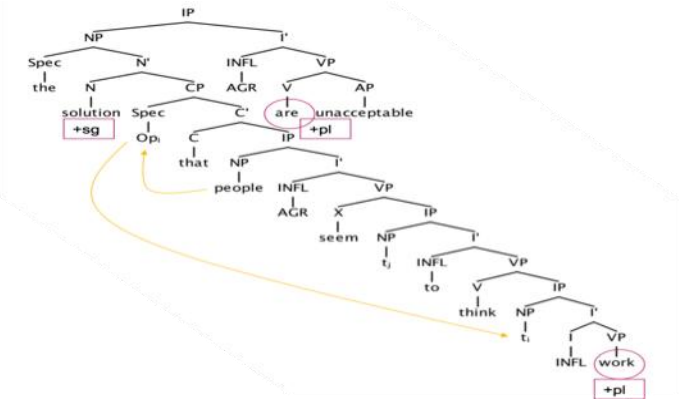

Figure 1. An attraction error involving the passing of plural features from a local noun *people* to the relative pronoun to the trace as well as to the head nominal and main verb.

First, the speaker produces the head noun solution and the coindexed operator, with a singular number value. At the point when the speaker produces the relative clause that the people… the plural feature of people passes up to the operator. As the speaker continues with the relative clause seem to think and produces the trace, the plural value of the operator is copied onto the trace, and then onto the verb work. As for the error in the main clause, the plural feature of people could be passed up to solution and then copied onto the main verb are.

The account of this error is compatible with incremental speech production and to some extent with current research in agreement production, but it does bring up a few tricky points. First of all, the plural value of the trace originates not from a local noun embedded under that node, but from outside and above the trace. Attraction in this structural relationship has not been investigated empirically. Also, this account implies that the trace is a copy of the relative pronoun, which may have implications for syntactic theory.

Now consider an error that appears to have a singular attractor: *And, you know, it, uh, it kind of knocks down two of the big risk categories for coronary artery disease which is, uh, uh, low cardiovascular fitness, and also, uh, you know, the cholesterol*, shown in Figure 2. Here, the mismatch is between the subject trace of the relative clause and the relative clause verb *is*.

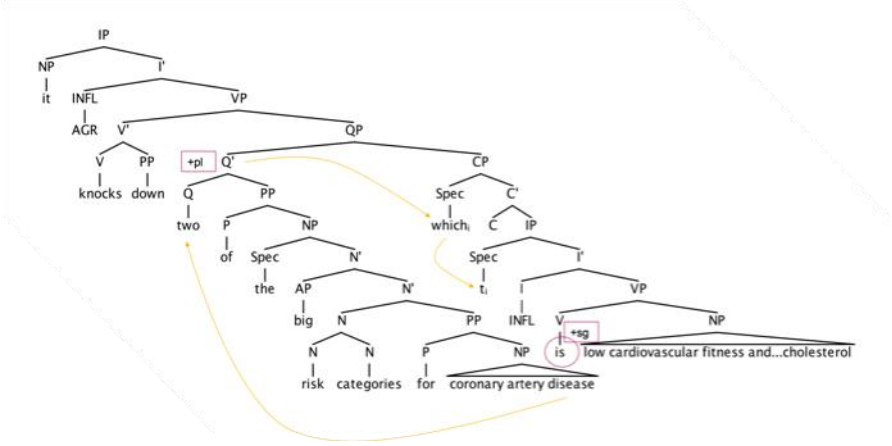

Figure 2. The path of feature-passing in attraction error in which the singular feature of *disease* interferes with the subject verb agreement in the relative clause *which is low cardiovascular fitness and…cholesterol.*

The only possible singular attractor in the subject NP is disease, which is local for neither the relative pronoun nor the trace. In this case, the only path along which the singular feature may be passed from disease to the trace is through the quantifier two and then to the relative pronoun and to the trace. Problems with this account include singular attractors are rare, and the attractor

disease is embedded quite low in the hierarchical structure. Furthermore, psycholinguistic research has shown the number value of pronouns to be linked to the conceptual value of the antecedent, and not affected by syntactic attractors local to the antecedent. While the categorization of this mismatch as an attraction error is compatible with incremental production, the specific mechanisms that are needed to work out the attraction story make it somewhat implausible.

A third example comes from a token where there is no possible attractor in the subject NP, but rather from the plural object: *One thing I thought about the other day were batteries*. In this case, plural feature from the object batteries would have to be copied over to the verb prior to the grammatical encoding of batteries. Object attraction has been shown with preverbal objects in Dutch (Hartsuiker, Antón-Méndez, & van Zee 2001) and inside relative clauses (English: Bock & Miller 1991; French: Franck, Soare, Frauenfelder & Rizzi 2010), but not in main clauses. The constraints on object attraction in English subject-verb agreement that could explain the patterns seen in the examples in (2) above have yet to be made explicit. One possibility, however, is that in copular equatives where the subject and its coindexed predicate nominal are separated by a relative clause, the verb may be more likely to agree with the predicate nominal than with the subject (consider that *One thing were batteries* sounds much less acceptable.)

To briefly summarize, assuming a classic GB structure to account for attraction errors in these examples requires specific assumptions about the relationship between the head nominal, relative pronoun and the trace. Specifically, they suggest that the relative pronoun features copy to the trace (and not vice versa), and that the syntactic features of relative pronouns are copied from their antecedents. And in cases such as (3), a relative clause may increase the possibility of object attraction errors. If psycholinguistic models are going to assume such representations, it may be necessary to posit agreement processes unique to relative clauses (including passing features down, rather than up, a hierarchical structure, and allowing features inside relative clauses to interfere with agreement in the main clause). Furthermore, in (1d), (1e) and (2c), attraction cannot explain the subject-verb agreement mismatch.

There is, however, an alternative to accounting for these mismatches as attraction errors. Recall that in cases where the subject head noun has an interpretation that does not match its form, subject-verb agreement may reflect a semantic, rather than syntactic number value. It may be the case that the tokens presented here are similar to collectives (e.g., the group of bills that one person has), distributives (e.g., a solution that many people think of), and other subjects with a mismatch between the semantic and grammatical number values of the subject (e.g., ‘one thing’ = batteries, having a semantically plural value). If so, a framework that separates grammatical from semantic features, along with a psycholinguistic model that gives the verb direct access to conceptual

representations, may be able to provide a unified account of these tokens. The Wechsler & Zlatić (2003) approach to agreement in HPSG provides such a framework, without requiring agreement processes that are unique to relative clauses. An example is provided in Figure 3.

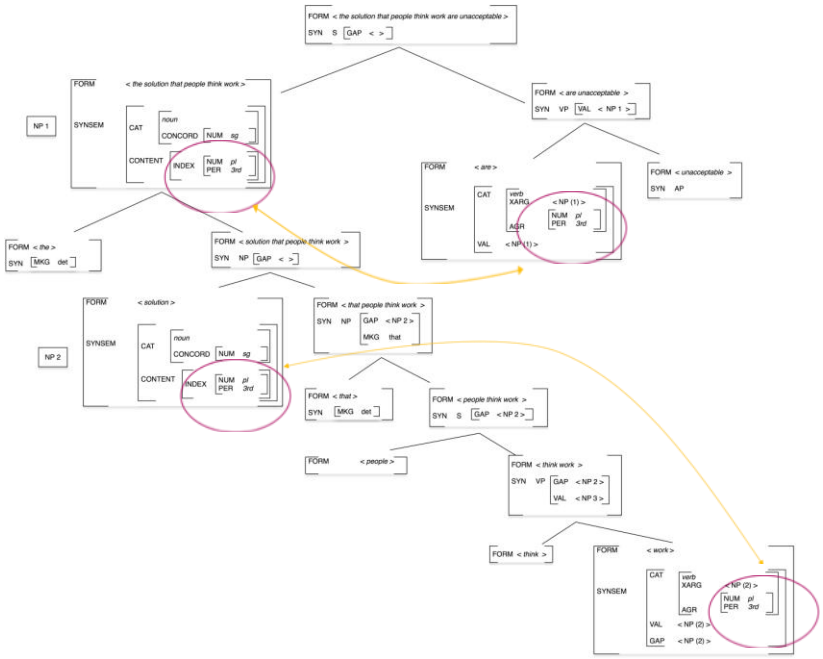

Figure 3. Subject-verb agreement in and underspecified HPSG representation of *The solution that people think work are unacceptable.* In HPSG, subject-verb agreement is constrained by Index features that correlate with semantic information about referent number, while morphological form is constrained by Concord features that correlate to syntactic number values.

The GB representations may still provide a plausible account of these errors, under the assumption that the modified head nominal has a semantic number value differing from the syntactic value. One might, for example, discard the notion of the trace being a syntactic copy of either the relative pronoun or the operator, and treat it rather as a reactivation of the head nominal referent with fully intact semantic and syntactic features but with the phonological representation suppressed. This move might allow the use of GB representations within a primarily semantic account of agreement, and may in practice be little different from an HPSG account, although adopting an HPSG representation is likely more efficient, as HPSG already handles semantic agreement.

To fully merge HPSG representations with production models of these mismatches we must more fully specify the constraints on mismatches between

semantic and syntactic agreement features. Adding constructional constraints, as in Sign-Based Construction Grammar (SBCG, a construction grammar approach using HPSG feature structures (Sag, to appear)), may allow us to better predict when speakers might produce such utterances. Fully specifying the relative clause constructions that elicit these mismatches is a necessary next step.

5 Conclusions and future directions

The largest remaining question about the relative-clause tokens reviewed in this paper is what exactly is driving the agreement mismatches involved. If the primary factor is attraction, then a GB approach may be appropriate, and may provide directions for further work in psycholinguistic modeling of relative clause production. If the primary factor is semantic interpretation of the subject head noun, then HPSG/SBCG formalisms may better represent the type of relative clause structures that speakers make use of during production. Definitively choosing between syntactic representations for psycholinguistic purposes will require experimental investigation. A research program that addresses this question may include judgment or rating tasks, as well as reaction-time studies, to determine whether or not speakers entertain various semantic interpretations of such subject referents and how relative clauses influence such interpretations; elicited production studies to investigate whether speakers, when biased toward particular semantic interpretations of subject referents produce these agreement patterns; and behavioural studies to address the questions raised concerning the relationship of syntactic to semantic features among structural components involved in relative clause production.

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References

Bock, K., Cutler, A., Eberhard, K. M., Butterfield, S., Cutting, J. C., & Humphreys, K. R. (2006). Number Agreement in British and American English: Disagreeing to Agree Collectively. *Language* 82(1): 64-113.

Bock, K., Eberhard, K. M., Cutting, J. C., & Meyer, A. S. (2001). Some attractions of verb agreement. *Cognitive Psychology* 43: 83-128.

Bock, K., & Miller, C. A. (1991). Broken Agreement. *Cognitive Psychology* 23(1): 45-93.

Eberhard, K., Cutting, J., & Bock, K. (2005). Making syntax of sense: number agreement in sentence production. *Psychological Review* 112(3): 531-59.

Franck, J., Vigliocco, G., & Nicol, J. (2002). Subject-verb agreement errors in French and English : The role of syntactic hierarchy. *Language and Cognitive Processes* 17(4): 371-404.

Franck, J., Soare, G., Frauenfelder, U. H., & Rizzi, L. (2010). Object interference in subject-verb agreement: The role of intermediate traces in movement. *Journal of Memory and Language* 62: 166-182.

Garrett, M. F. (1975). The Analysis of Sentence Production. *The Psychology of Learning and Motivation* 9: 133-177.

Godfrey, J. J., Holliman, E. C., & McDaniel, J. (1992). SWITCHBOARD: Telephone Speech Corpus for Research and Development. *Proceedings of ICASSP* 92: 517-520. San Francisco.

Hartsuiker, R. J., Antón-Méndez, I., & van Zee, M. (2001). Object attraction in subject-verb agreement construction. *Journal of Memory and Language* 45: 546-572.

Humphreys, K. R., & Bock, K. (2005). Notional number agreement in English. *Psychonomic Bulletin & Review* 12(4): 689-95.

Levelt, W. J. M. (1989). *Speaking: From Intention to Articulation*. MIT Press. Cambridge, MA.

Sag, I. A. to appear. Sign-Based Construction Grammar: An informal synopsis. In Hans Boas and Ivan A. Sag (eds.), *Sign-Based Construction Grammar*. Stanford: CSLI Publications.

Vigliocco, G., Butterworth, B., & Semenza, C. (1995). Constructing Subject-Verb Agreement in Speech: The Role of Semantic and Morphological Factors. *Journal of Memory and Language* 34: 186-215.

Vigliocco, G., & Hartsuiker, R. J. (2002). The Interplay of Meaning , Sound , and Syntax in Sentence Production. *Psychological Bulletin* 128(3): 442- 472.

Vigliocco, G., & Nicol, J. (1998). Separating hierarchical relations and word order in language production: is proximity concord syntactic or linear? *Cognition* 68(1): 13-29.

Wechsler, S., & Zlatić, L. (2003). *The many faces of agreement*. CSLI Publications. Stanford, CA.

What does it take to host a (restrictive) relative clause?

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This paper discusses the syntactic and semantic properties of descriptive relative clauses, a type of relative clause which has mainly been discussed in the literature on Chinese. It is argued that descriptive relative clauses are found in German. In particular it is shown that German has a set of determiners which are used for discourse referents that are already uniquely identifiable. As such, they cannot be restricted by a relative clause. However such DP's can be modified by descriptive relative clauses. It is proposed that descriptive relative clauses attach to NP while restrictive relative clauses attach to *n*P. Thus, the paper contributes to the question as to whether there are different relative clauses associated with different layers of projections in the nominal domain.

1 Introduction

I have two main goals in this paper, one theoretical and one empirical. I introduce each of them in turn.

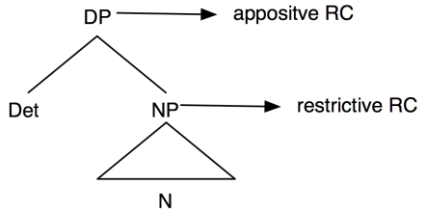
1.1 Theoretical goal: Where do relative clauses attach?

On the standard assumption that the constituents found in natural languages are hierarchically organized, there have been, for a long time, two possible sites of attachment for relative clauses (RC). Ever since Partee 1975 (231), these two sites of attachment have been argued to correspond to two distinct types of RC's:

i) *Appositive RC's* (henceforth ARC) attach to the projection which includes the determiner and as such correspond to *term modification*.
ii) *Restrictive RC's* (henceforth RRC) attach to the nominal projection which excludes the determiner and as such correspond to *common noun modification*.

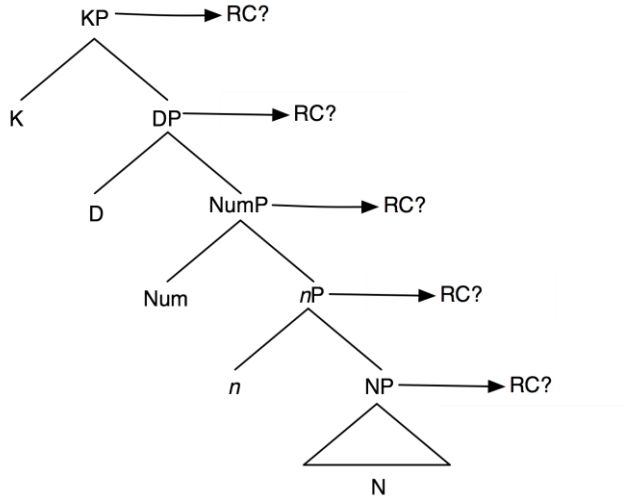
Since Abney's 1987 DP hypothesis, the two levels of attachment are assumed to correspond to DP and NP, respectively. This is illustrated in (1).

(1) Two sites of attachment for two types of RC's



More recently, however, there has been an explosion of functional categories both in the verbal and in the nominal domain. Relevant for our purposes is the fact that there are more than two projections within the nominal domain. The number and labels of functional categories is still subject of much debate. In (2) below I give a structure that contains some of the more frequently assumed projections including KP (Bittner & Hale 1991), DP (Abney 1987), Num(ber)P (Ritter 1991), *n*P (Marantz 1997, Lowenstamm 2008, Saxon & Wilhelm 2010) as well as NP. Given the structure in (2), the question arises as to whether RC's can attach at each functional projection.

(2) More layers – more RC's?



Everything else being equal, we expect this to be the case. But if so, we may expect to find more than two types of RC's. So is there a different type of RC associated with each layer of functional projection within the DP and how can we tell? This is the larger research question within which I investigate the particular empirical problem I am concerned with in this paper.

1.2 Empirical goal: Where do relative clauses attach?

The empirical goal for this paper is to analyze a peculiar type of RC associated with a particular kind of definite DP in an Austro-Bavarian dialect. Specifically, this type of RC is neither restrictive, nor is it appositive, as I will show. To get an initial idea as to the semantic properties of this RC, consider the example in (3).

(3) *Context: the mailman who has been delivering mail in the neighborhood for the last 10 years is retired. Everyone knows this mailman. A and B have been living in this neighborhood. A tells B.*
Wasst eh, **da** Briaftroga (wos bei uns austrogn hot) is jetz in Pension.[1]
Know prt det_w mailman comp at us delivered has is now in retirement
'You know, the mailman (who delivered our mail) is now retired.'

In this context, the mailman is situationally unique, such that both speech act participants know that there is only one salient mailman. As such, the RC does not serve to identify the discourse referent under discussion. This is consistent with the fact that in (3) nothing is said about other mailmen (i.e., mailmen who did not deliver our mail). Thus, the RC in (3) cannot be considered a restrictive RC. This minimally contrasts with the example in (4).

(4) Context: *A and B are having a discussion about the retirement age of mailmen, and other civil servants. A complains:*
Die Briaftroga und die Leit vo da Muehobfua gengan vü'z boid in pension. Zum Beispü,…
'*Mailmen and garbage collectors retire way too early. For example…*
…**dea** Briaftroga dea wos bei uns austrogn hot is jetz in Pension
det mailman det_s comp at us delivered has is now in retirement
'*the mailman who delivered in our neighborhood is now retired.'*

In this context, all mailmen are under discussion and the RC serves to identify the particular mailman A wants to talk about, i.e. the one that delivered the mail in A and B's neighborhood. In this context, something is said about other mailmen

[1] I follow the standard practice of using the informal orthography for Austro-Bavarian. This is in part based on the Standard German Orthography but changed to reflect the differences in pronunciation. To the best of my knowledge there is no official orthography. Since however we are not concerned with detailed phonological information, I will not provide phonetic transcription of the examples. The glosses include the following abbreviations: 2 = 2nd person; 3 = 3rd person; acc= accusative; cl = classifier; comp = complementizer; cop = copula; det = determiner; fem = feminine; masc = masculine; neut = neuter; nom = nominative; pl = plural; Prt = particle; refl = reflexive; s = strong; sg = singular; top = topic; w = weak

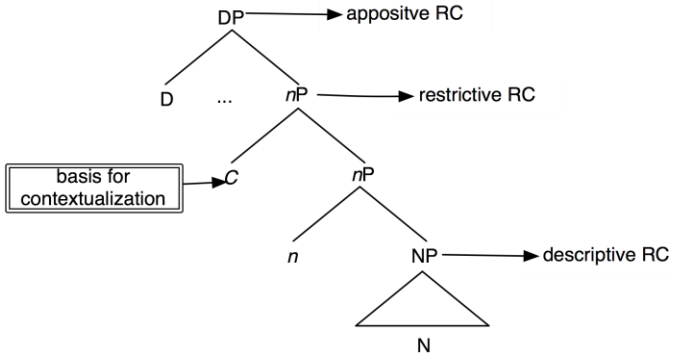
(i.e., there may be some that have not retired yet, etc.). As such, the RC in (4) can be considered an RRC. Note that the difference between (3) and (4) correlates with a difference in the form of the determiner: if there is a unique mailman, as in (3), the determiner is used in its reduced form, sometimes referred to as the *weak determiner* (henceforth Det_w); if there is no unique mailman salient in the discourse context, as in (4), a different form of the determiner is used, namely the *strong determiner* (henceforth Det_s). Crucially, Det_s cannot be used in the context of situationally unique referents, while Det_w cannot be used if the discourse referent is not unique, as we will see.

The core problem I wish to address in this paper concerns the proper characterization and analysis of the RC in (3). As mentioned above, it does not appear to be interpreted as an RRC: the nominal it modifies already denotes a unique individual. Moreover, I will show that it also does not behave like an ARC. So what type of RC are we dealing with?

1.3 The proposal in a nutshell

The core proposal I argue for in this paper is summarized in (5). I propose that the third type of RC identified in (3), corresponds to so called *descriptive RC's* (also known as *characterizing RC's*) known in particular from Chinese languages (see del Gobbo 2005 for a recent analysis and relevant references). I further propose that descriptive RC's (henceforth DRC) attach at the NP level while restrictive relative clauses attach at the level of *n*P. I further argue, based on the properties of Det_w, that the *n*P layer serves as the basis for *contextualization:* whenever a given referent must be interpreted relative to the discourse context, *n*P must be present. I implement this by assuming that Spec*n*P hosts a discourse sensitive variable (labeled C in (5)). Since RRC's are introduced at *n*P, contextualization is possible. In contrast, since DRC's are introduced before C is introduced, it cannot serve to restrict the contextually relevant set of referents.

(5) Three sites of attachment for three types of RC's



I develop this argument as follows. I start in section 2, with a brief review of the properties of ARC's vs RRC's. This will serve as a starting point to explore the properties of DRC's in section 3. I show that they behave neither like RRC's nor like ARC's. In section 4, I show how the analysis introduced in (5) accounts for the properties of DRC's. In section 5, I briefly discuss and dismiss previous analyses of Det_w and their behaviour with respect to RC's. Finally, in section 6, I summarize and discuss the implications of the analysis, as well as avenues for further research.

2 Restrictive vs. appositive relative clauses

The difference between RRC's and ARC's has been widely discussed in the literature (see for example Fabb 1990, de Vries 2006 among many others). Here I briefly summarize those differences that play a role in distinguishing DRC's. I start with the interpretive differences associated with the head of the relative clause. An RRC forms an **integral part** of the definite description: it is necessary to determine the referent of that description. For example in (6), the RRC (underlined) serves to identify the relevant young man (i.e., there may be several young men contextually relevant).

(6) The little boy <u>whom you gave the balloon yesterday</u> is Mary's son.

In contrast, an ARC provides extra information about its external head noun the referent of which is determined on independent grounds. This is illustrated in (7) where the head noun is *the moon*, a unique individual, which need not be restricted to be identified.

(7) The sun, <u>which seems to be much hotter these days</u>, will rise at 5.21 tomorrow.

Crucially, for our purposes, the difference between RRC and ARC is not restricted to interpretive differences between their nominal heads. Rather the differences go along with formal differences associated with the RC itself. For example, RRC's but not ARC's may contain variables that are bound from outside of the RC (BVA). Second, RRC's but not ARC's may be extraposed (Ziv & Cole 1974). Third, ARC's but not RRC's may conain speaker-oriented adverbs. Finally, the two types of RC's also differ in their intonational properties: ARC's display comma intonation (similar to parentheticals) while RRC's don't. Instead they form a major phrase (see for example Selkirk 2005). This is summarized in

table 1.[2]

Table 1. Restrictive vs. appositive RC's

	function	BVA	xtraposition	S-adverbs	intonation
ARC	extra info	✓	✓	✓	comma
RRC	integral	✗	✗	✗	major P

In addition, ARC and RRC can also be distinguished on the basis of the relative pronoun and/or complementizer that introduces them. In particular, ARC's in English must be introduced by a relative pronoun (i.e., a wh-word) while RRC's can but need not be introduced by a relative pronoun, or a complementizer. This is summarized in table 2.

Table 2. Restrictive vs. appositive RC's

	relative pronoun (*wh*-word)	complementizer *that*	Ø
ARC	✓	✗	✗
RRC	✓	✓	✓

The diagnostics to distinguish between ARC's and RRC's are similar in German. This will allow us to explore the properties of DRC's.

3 Exploring descriptive relative clauses

To explore the properties of DRC's we will proceed as follows. We start by investigating the properties of the head of the relative clause, establishing that it does indeed denote a (situationally) unique individual (section 3.1). We then investigate properties of RC's headed by DP's which denote unique individuals establishing that they are neither appositive nor restrictive (section 3.2). Finally we show that DRC's also differ in the way they can be introduced (relative pronoun vs. complementizer; section 3.3).

3.1 Definite DP's that refer to unique individuals

Recall that there is difference between the RC's in (3), headed by a definite DP with Det_w and the one in (4), headed by a definite DP with Det_s. In particular, I have claimed that Det_w is only felicitous in contexts where the discourse referent is unique. The purpose of this subsection is to investigate the properties of weak determiners in more detail in order to establish that they do indeed denote a

[2] For reasons of space I cannot give examples to illustrate these differences. See the references cited for relevant examples.

unique individual.

The difference between strong and weak determiners in dialects of German has been subject of considerable attention for the last 40 years. It was first documented for a dialect of Frisian (Fering) by Ebert 1971 and has since been described for a number of different dialects (Heinrichs 1954, Hartmann 1967: Rhineland; Ebert 1971: Fering (Frisian); Hartmann 1982: Mönchen-Gladbach; Schuster & Schikola 1984: Viennese; Scheutz 1988: Bavarian; Brugger & Prinzhorn 1996: Austro-Bavarian; Himmelmann 1997: Köln; Schmitt 2006: Hessian; Schwager 2007: Bavarian; Leu 2008: Swiss; Schwarz 2009: Standard; Waldmüller 2006: Standard**).**

Consider the following examples from Ebert 1971 and her description.

(8) a. A hünj hee tuswark
det_w dog has tooth.ache
'The dog has a tooth ache.'
b. Di hünj hee tuswark
det_s dog has tooth.ache
'The dog has a tooth ache.'

> "*Both utterances presuppose that the hearer already knows which dog is meant. But the presuppositions for [the two forms] are of a different nature. [ii] is an adequate utterance if the dog was specified in the preceding text; the D-article then refers anaphorically to the text referent. [ii] presupposes that the intended dog does not need to be specified any further, because there is only one dog at the time and place of the speech act that could be meant."* (Ebert 1971: 83; translation Schwarz 2008: 27)

In essence, Det_s is used anaphorically, while Det_w is used for unique referents. This seems to be consistent across the different German dialects. The dialect under investigation in this paper is Austro-Bavarian. The paradigm for both determiners is given in table 3 where the left half lists Det_s and the right half lists Det_w .[3]

Table 3. Strong determiner paradigm

Det_s	m.sg	fem.sg	neut.sg	Det_w	m.sg	fem.sg	neut.sg	m.sg
nom	dea	die	des		da	d	(i)s	da
acc	den	die	des		(i)n	d	(i)s	(i)n
dat	dem	dea	dem		(i)m	da	(i)m	(i)m

[3] For the purpose of this paper I ignore plural determiners.

I now show that the two determiners differ in their context of use. What is of interest for the present purpose is that Det_w is only felicitous if the discourse referent is unique. This is reflected in the costraint in (9) proposed by Brugger & Prinzhorn 1996.

(9) NP is introduced by Det_w iff **|NP|=1 in D**
(where D is the domain of discourse)

In what follows we see evidence for this constraint. Much of the following data discussion is taken from Schwarz 2009, who analyzes the difference between strong and weak determiners in Standard German (see section 5.3 for a comparison between his analysis and mine).

First, given the uniqueness constraint, it is predicted that nominal phrases that are inherently associated with a unique referent will be introduced by Det_w. This is indeed the case. Names (10), dates (11), and superlatives (12) have to be introduced by Det_w.

(10) a. I hob **n'/#den** Hons gsegn.
I have det_w/det_s Hans seen
'I have seen Hans.'
b. I woa no nia in **da/#dea** Türkei.
I was yet never in det_w/det_s turkey
'I have never been to turkey.'

(11) Heid is **da/#dea** 19. Juni.
today is det_w/det_s 19th June
'Today is June 19th.'

(12) Ea woa gestan **da/#dea** Beste.
He was yestreday det_w/det_s best
'Hans dances the best.'

Similarly, DP's that denote unique functions (13), unique relations (14), or unique body parts (15), also have to be introduced by Det_w.

(13) Noch jedem Spü muass **da/*dea** Valiera wos ausziagn.
after each game must det_w/det_s loser indef take.off
'After each game, the loser must take off a piece of clothing.'

(14) Wie geht's' n **da/*dea** Frau?
how goes'it prt det.$_w$/det_s woman
'How is your wife doing?'

(15) Host da **n'/*den** Kopf onghaut?
Have you det_w/det_s head banged
'Did you bang your head?'

More examples of Det_w introducing DP's which denote unique individuals are given below. They differ in the type of context relative to which the discourse referent is unique. In (16), the cabinet is unique in the immediate situation use (in the sense of Hawkins 1978). This could be uttered by a husband who knows that his wife is looking for her glasses. In (17), the dog is unique in the larger situation use. This sentence could be uttered by someone telling a friend about an attempted break-in at his neighbor's house. And finally, in (18), the sun is unique in the global situation use.

(16) Dei Brün is auf **da/#dea** Kredenz
your glasses is on det_w/det_s cabinet
'Your glasses are on top of the cabinet.'

(17) **Da/#dea** Hund hot die Einbrecher vajogt
det_w/det_s dog has det burglars chased.away
'The dog has chased away the burglars.'

(18) **D/#die** Sun geht heit um hoib sechs auf
det_w/det_s sun rises today at half six up
'Today, the sun rises at 5.30.'

Next, generics are also introduced by Det_w, no matter whether the noun is in the singular or in the pural, as shown in (19).

(19) a. **Da/#dea** Wal wird boid aussteam
det_w/det_s whale will soon go.extinct
'The whale will soon go extinct.'
b. **D/#die** Wale wean boid aussteam
det_w/det_s whale.pl will soon go.extinct
'The whale will soon go extinct.'

Finally, Det_w must be used for non-referential DP's such as idioms (20) and what has been referred to as 'bare singular noun phrases' (Stvan 1998).

(20) Hiatz geht's um **d'/#die** Wuascht
now goes'it about det_w/det_s sausage.
'Lit.: Now, it's about the sausage.'
'It's now or never.'

(21) Ea geht no ned in **d'/#die** Schui.
He goes yet not in det_w/det_s school
'He doesn't go to school yet.'

Interestingly, Det_w cannot be used if the DP anaphorically refers to a previously introduced discourse referent, as shown in (22).

(22) In da Stodtbücherei gibt's **a Buach** über Kanada.
in det townlibrary exists it a book about Canada
Letzens woa I doat und hob ma **#s/des** **Buach** ausboagt.
Recently was I there and have me det_w/ det_s book borrowed
'In the public library, they have a book about Canada. Recently, I was there and borrowed that book.'
(adapted from Schwarz 2009: 24 (25))

This is particularly interesting, because it is not immediately clear why the uniqueness requirement in (9) would rule out Det_w in (22). One might think that the introduction of the discourse referent in the preceding sentence would suffice to render the discourse referent unique in D. But this doesn't seem to be sufficient to use Det_w.. A similar point is made by the example in (23). In this context there is a unique house that A is pointing to, but nevertheless Det_w is infelicitous – it doesn't support deictic reference.

(23) *Context: A points to a house (the only one in the immediate surrounding) and asks B:*
Gfoit da **#s'/des** Haus?
like you det_w /det_s house
'Do you like this house?'

In sum, we have the following differences in the context of use for Det_s and Det_w, respectively.

Table 4. Distribution of Det_s and Det_w

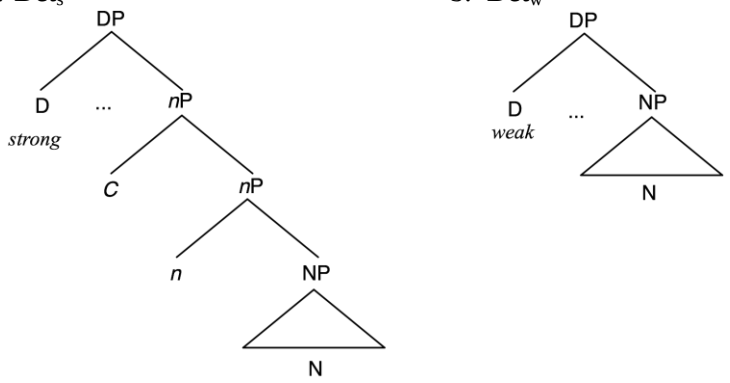
	Det_s	Det_w
situationally unique	✓	✓
generic	✓	✓
anaphoric	✓	✓
deictic	✓	✓

Note that the notion *situationally unique* is not quite enough, since there is a sense in which the referent of an anaphoric or deictic DP is also situationally

unique. The difference between those contexts in which Det_w is felicitous and those in which it is not has to do with whether or not the uniqueness of the referent must be established in current discourse. Det_w is used if the uniqueness of the discourse referent does not need to be established. It is in this sense that the use of Det_w does not depend on the *discourse context*. As such it is crucial that we distinguish between the *common ground* that is independent of the current conversation (we may call it the common background) and the conversational common ground, which is sensitive to and manipulated by the ongoing discourse (see Krifka 2008).

Turning now to an analysis of this pattern, I propose that the difference lies in the selectional properties associated with the determiner. D_s selects for *nP* while D_w selects for NP, as illustrated in (24).

(24) a. Det_s b. Det_w



According to the proposal introduced in (5), it is the projection of *nP*, which forms the basis for contextualization (represented as C in (24)a). I propose, that C provides the basis for context dependence, such as *domain restriction, anaphora*, and *contrast sets*.[4] On this account then, the impossibility for Det_w to be dependent on the discourse context is structurally conditioned. It follows from the absence of an *n*P complement which in turn results in the absence of C.[5] In the absence of C, this DP cannot be anaphoric or deictic. Furthermore, this will

[4] At this point the postulation of C associated with Spec*nP* should merely be taken as a way of implementing the empirical generalization. I have nothing to say about the theoretical status of C. *See* Stanley & Szabó 2000 for the claim that domain restriciton is associated with NP (rather than for example D). See, however Gillon 2006, for a different view. By *contrast set* I mean a set of alternatives of referents with the same property introduced by NP. As such it is similar but not identical to the familiar set of alternatives associated with focus. See section 5 for a bit more discussion

[5] See section 5 for a comparison with previous analyses of the contrast.

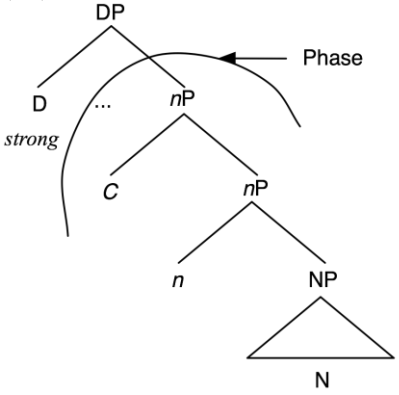
allow us to understand the fact that only ARC's and DRC's but not RRC's are compatible with Det_w: RRC's require a contrast set which in turn requires C.

The structural difference between Det_w and Det_s is consistent with the fact that only the former but not the latter allow for subextraction (Brugger & Prinzhorn 1996: 5)

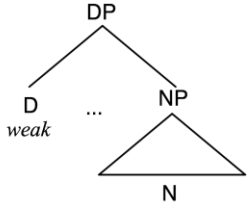
(25) a. Von wem host du **[s Possbild** t] nit gsegn?
of whom have you det_w passport.foto not seen
'Whose passport pictured did you not see?'
b. *Von wem host du [**des Possbild** t] nit gsegn?
of whom have you det_s passport.foto not seen

Suppose that *n*P – like *v*P – is a phase. It would then follow that extraction out of a DP headed by Det_s is impossible because there is an intervening phase boundary. In contrast, extraction out of DP's headed by Det_w is possible since that phase boundary is missing, as shown in (26).

(26) a. Det_s



b. Det_w



The structure in (26) may also allow us to understand the prosodic properties of the determiners. Only Det_w but not Det_s may procliticize to the following noun (see section 5.1 for relevant data). This is consistent with the absence of a phase-boundary below Det_w.

3.2 The properties of DRC's

We have now established that the head of DRC's – DP's introduced by Det_w – do indeed denote individuals that are situationally unique without having to be introduced as such. We now turn to the properties of the DRC itself. I start by establishing that we are neither dealing with an ARC nor with a RRC.

It has been observed that DP's introduced by Det_s may host both ARC's and RRC's, as in (27). In contrast, DP's introduced by Det_w can only host ARC's but not RRC's, as shown in (28) (cf. Brugger & Prinzhorn 1996: 15).

(27) a. **des** Buach des was da CHOMsky gschriem hat…
det_s book det_s comp det_w Chomsky written has
'The book that Chomsky wrote….'
b. **des** Buach, des was da Chomsky gschriem hat…
det_s book det_s comp det_w Chomsky written has
'The book, which Chomsky wrote….

(28) a. I hob **s** Buach was da Chomsky gschriem hat nit glesn
I have det_w book comp det_w Chomsky written has not read
'The book Chomsky wrote….'
b. *I hob **s** Buach des (was) da Chomsky gschriem hat nit glesn
I have det_w book pron was det_w Chomsky written has not read
'I didn't read the book, which was written by Chomsky.'

At first sight, it is not surprising that RRC's are incompatible with Det_w given the properties associated with Det_w we have discussed in section 3.1. Since Det_w is only compatible with NP's that denote individuals that are already unique, further restriction by an RRC is impossible. On this view, the incompatibility between Det_w and RRC is semantically conditioned (see however section 5.1 for problems with this view). Rather, their function is roughly to characterize or describe the referent. I therefore analyze them as descriptive relative clauses, a type of RC which has been previously reported for Chinese (see del Gobbo 2005).

While it is true that RRC's are incompatible with DP's headed by Det_w, it is not the case that all RC's associated with such DP's are appositive. Recall that ARC's cannot contain bound variables. This is illustrated in (29) for English, and in (30) for Austro-Bavarian.

(29) a. [Every professor]$_i$ catches a student who cheats in his$_i$ class.
b. *[Every professor]$_i$ catches John, who cheats in his$_i$ class.

(30) a. [A jeda Professor]$_i$ dawischt an Studentn, der bei eam$_i$ schwindlt
indef every professor catches det_w student det at him cheats
'Every professor catches the student who cheats in his class.'
b. *[A jeda Professor]$_i$ dawischt in Hons, der bei eam$_i$ schwindlt
indef every professor catches det_w Hans det at him cheats

Crucially, as shown in (31), the RC associated with the DP introduced by Det_w is compatible with a pronoun functioning as a bound variable.

(31) A jede Hausfrau$_i$ bei uns in da siedlung…
A each housewife at us in det$_{sg}$ neighbourhood
…kennt n briaftroga wos **ia$_i$** d post bringt
… knows det$_w$ mailman comp her det$_w$ mail brings
'Every housewife in our neighbourhood knows the mailman who brings her the mail.'

Similarly, unlike ARC's, RC's associated with a DP introduced by Det_w are not compatible with a speaker-oriented adverb. This is illustrated in (32)

(32) Wasst eh, da Peter is saua, …
Know.2sg prt det$_w$ Peter is mad…
*wei's Zimma wos's eam **übrigens** z'spot gem hom so kla is
as det$_w$ room comp-they him by.the.way too.late given have so small is
'Peter is mad because they room they gave him is so small.'

This establishes that these RC's are not appositive. Evidence that these RC's are not restrictive either, stems from the fact that they cannot be extraposed, as shown in (33). This contrasts with RC's associated with DP's introduced by Det_s, which are restrictive, and which may be extraposed, as shown in (34).

(33) Wasst eh, da Peter is saua, …
Know.2sg prt det$_w$ Peter is mad…
i) …wei **s** Zimma wos's eam gem hom so kla is
… as det$_w$ room comp'they him given have so small is
'Peter is mad because they room they gave him is so small.'
ii) *…wei **s** Zimma so kla is wos's eam gem hom
… as det$_w$ room so small is comp'they him given have

(34) Wasst eh, da Peter is saua, …
know-2sg prt det$_w$ Peter is mad…
i) …wei **des** Zimma des (wos)'s eam gem hom so kla is
… as det$_s$ room det$_s$ comp'they him given have so small is
'Peter is mad because they room they gave him is so small.'
ii) …wei **des** Zimma so kla is des (wos)'s eam gem hom
… as det$_s$ room so small is det$_s$ comp'they him given have
'Peter is mad because they room they gave him is so small.'

Next we turn to the intonation of RC's. RRC's typically form 2 major phrases with their head (Selkirk 2005) while ARC's display comma intonation. The RC associated with a DP headed by Det_w however forms 1 major phrase with its head. This is indicated in (35).

(35) …wei's Zímma **wos's** eam gem hom so kla is
… as det_w room comp'they him given have so small is
'Peter is mad because they room they gave him is so small.'
wei (s ZIMma wos's eam gem hom so kla is)
H

In sum, RC's associated with DP's introduced by Det_w do not behave like RRC's nor like ARC's. The differences are summarized in table 5.

Table 5. The properties of DRC's

	BVA	xtraposition	S-oriented adv	function	intonation
ARC	□	□	□	extra info	comma
RRC	□	□	□	integral	2 MajorP
DRC	□	□	□	descriptive	1 MajorP

3.3 Introducing DRC's

DRC's also differ from RRC's and ARC's in the way they are introduced. While RRC's can be introduced by a relative pronoun and the complementizer *wos* as in (37), a DRC does not allow for a relative pronoun but instead can only be introduced by the complementizer *wos* as in (36).

(36) Context: *A and B are having a discussion about the retirement age of mailmen, and other civil servants. A complains:*
Die Briaftroga und die Leit vo da Muehobfua gengan vü'z boid in pension. Zum Beispü,…
'*Mailmen and garbage collectors retire way too early. For example…*
…**dea** Briaftroga dea wos bei uns austrogn hot is jetz in Pension
det mailman det_s comp at us delivered has is now in retirement
'*the mailman who delivered in our neighbourhood is now retired.'*

(37) *Context: the mailman who has been delivering mail in the neighborhood for the last 10 years is retired. Everyone knows this mailman. A and B have been living in this neighborhood. A tells B.*
Wasst eh, **da** Briaftroga (*dea) wos bei uns austrogn hot is in Pension.[6]
Know prt det_w mailman comp at us delivered has is in retirement
'You know, the mailman (who delivered our mail) is now retired.'

3.4 Summary

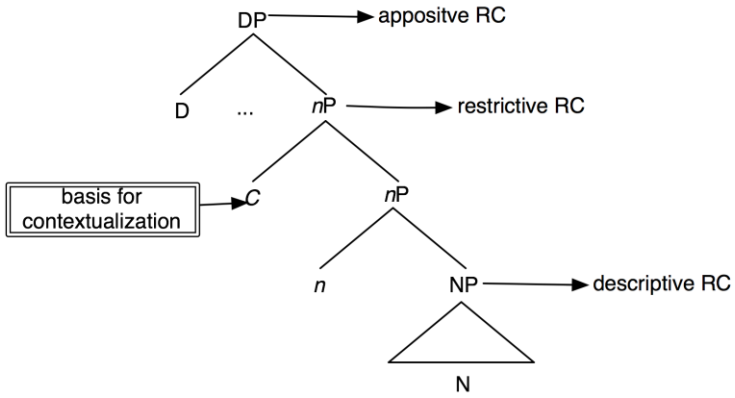
This concludes our exploration of RC's headed by DP's that are introduced by Det_w. Since these DP's refer to unique individuals even in the absence of the RC it follows that the RC cannot be restrictive. And indeed in the literature it has been claimed that RRC's are impossible in this context. However, we have seen that such DPs may be modified by RC's. A detailed investigation of the properties of such RC's has revealed that they differ not only from RRC's but also from ARC's. We can therefore conclude that we must recognize a type of RC different from RRC or ARC. I propose that we are dealing with a descriptive relative clause, in the sense familiar from the literature on Chinese (see for example del Gobbo 2005). The properties we have observed indicate that DRC's form a tight unit with the head they modify: DRC's cannot be extraposed and they form an intonational unit with their head. In what follows, I develop an analysis which captures this behavior.

4 The syntax of descriptive relative clauses

As briefly introduced in section 1.3, I propose that DRC's differ from RRC's and ARC's in their attachment site. This illustrated in (5) repeated below as (38).

[6] I follow the standard practice of using the informal orthography for Austro-Bavarian. This is in part based on the Standard German Orthography but changed to reflect the differences in pronounciation. To the best of my knowledge there is no official orthography. Since however we are not concerned with detailed phonological information, I will not provide phonetic transcription of the examples. The glosses include the following abbreviations:

(38) Three sites of attachment for three types of RC's



In this section, I first present independent evidence for the structural difference between DRC's and RRC's (section 4.1). I then show that in light of the analysis of Det_w developed in section 3.2, it follows that Det_w may not associate with RRC's (section 4.2).

4.1 A structural difference between RRC's and DRC's: independent evidence

At least since Bolinger 1967, we know that there are two positions available for nominal modification. This can be seen on the basis of the examples in (39), which show that adjectives may either follow or precede the nouns they modify.

(39)	TEMPORARY (EPISODIC)	CHARACTERISTIC (INTRINSIC)
a.	the stars **visible**	the **visible** stars
b.	the rivers **navigable**	the **navigable** rivers
c.	the individual **responsible**	the **responsible** individual
d.	the jewels **stolen**	the **stolen** jewels

Interestingly, the difference in linear order correlates with a difference in interpretation. In particular, if the adjective follows the noun it modifies, it is interpreted as a temporary (episodic) property of the individual. In contrast, if the adjective precedes the noun it modifies, it is interpreted as a characteristic (intrinsic) property of the individual. This semantic difference can be directly observed in the following examples (see also Larson & Takahashi (2002) discussing examples ascribed to Barbara Citko):

(40) a. #The stars visible are invisible today.
b. The visible stars are invisible today.

If the adjective denotes a temporary episodic property, a contradiction arises if the modified noun is predicated over the antonym of the modifier (*invisible*). In contrast, if the adjective denotes a characteristic (intrinsic) property predication over its antonym is perfectly acceptable: while these stars are usually among the visible ones, today they are covered by clouds.

Interestingly, the semantic contrast associated with the two positions for modifiers is not always the same. Beside a contrast between temporary and characteristic properties we also find a contrast between deictic and generic modification. Consider (41). If the temporal modifier *Thursday* follows the noun it modifies, it must be interpreted deictically. In contrast, if *Thursday* precedes the noun it modifies, it is interpreted generically.

(41)

DEICTIC	GENERIC
the lecture **Thursday**	the **Thursday** lecture

The difference in interpretation is made clear in (42). The prenominal generic use of the modifier is compatible with a reading in which a lecture that is usually held on Thursday is exceptionally taught on Wednesday this week. The announcement can be made with the sentence in (42)b but not with (42)a.

(42) a. #This week, the lecture Thursday will be on Wednesday
b. This week, the Thursday lecture will be on Wednesday

For completeness note that the prenominal position is in principle compatible with a deictic interpretation. Crucially, if both modifiers appear in prenominal position, the generic reading is associated with the modifier which occupies the position closer to the noun, while the deictic reading is associated with the modifier which precedes the generic modifier as well as the noun. Thus, in the context introduced above, where a lecture typically held on Thursday is exceptionally taught on Wednesday, the instructor could comment with (43)b, but not with (43)a at the end of the week (examples adapted from Larson & Takahashi 2002 ascribed to Jason Brenier).

(43) #My Thursday Wednesday lecture was interesting.
My Wednesday Thursday lecture was interesting.

The restriction on the order of the modifiers suggests that the deictic modifier is associated with a higher position than the generic modifier (Larson & Takahashi 2002).

Another contrast associated with the difference in modification site is that between *intersective* and *non-intersective* modification. Consider the examples below. On the intersective interpretation *beautiful* modifies the person who is

dancing and identifies him/her as a beautiful person. Similarly, *old* modifies the person who is a friend and identifies him/her as an old person. In contrast, on the non-intersective interpretation, *beautiful* specifies the dancing as beautiful rather than the person and *old* specifies the friendship as old rather than the person.

(44)

INTERSECTIVE	NON-INTERSECTIVE
the **beautiful** dancer	the **beautiful** dancer
= beautiful person	*= dances beautifully*
the **old** friend	the **old** friend
= old person	*=long lasting friendship*

The difference in interpretation is made clear in the following example. Adding the antonym of the modifier will force the non-intersective reading on the modifier which is closer to the noun

(45) a. Lena is an **ugly beautiful dancer.**
b. Pedro is a **young old friend.**

According to Larson 1998 (among others), the two types of modification we have just seen reflect two syntactic positions: an outer and an inner position.

What is crucial for our purpose is the fact that the same structurally conditioned difference between two types of modifiers has also been observed for relative clauses in various languages. In particular, Larson 1998 argues that the structural difference between the two types of RC's correlates with a difference between S(tage)-level and I(ndividual)-level modification such that S-level RC's occupy a higher position than I-level RC's. Evidence that these RC's are indeed associated with two different syntactic positions stems from certain ordering restrictions. For example, in Japanese, the two types of RC's may co-occur, but if they do, the S-level RC has to precede the I-level RC. This is illustrated in (46).

(46) Japanese
a. ✓S-level > I-level Japanese
[Watashi-ga kinoo atta] [tabako-o suu] hito-wa Tanaka-san desu.
[1sg.-nom yesterday met] [tobacco-acc inhale] person-top T.-cop
'The person who smokes who I met yesterday is Miss Tanaka.'
b. *I-level > S-level
?*[Tabako-o suu][watashi-ga kinoo atta] hito-wa Tanaka-san desu.

Del Gobbo 2005 argues that the classic distinction reported in the Chinese literature between restrictive RC's and descriptive RC's reduces to a contrast between S-level and I-level modification in the sense of Larson 1998. And again,

there is a structural difference that correlates with this interpretive contrast. While S-level RC's (RRC's) precede the determiner, I-level RC's (DRC's) follow the determiner indicating that they are associated with a lower position. This is illustrated in (47).

(47) Chinese

a. **RRC** D **DRC** N

[$_{RC}$ Zuotian meiyou lai de] na-ge [$_{RC}$hen xihuan shang ke de]
yesterday not come de that-cl very like go class de
…xuesheng jiao Zhangsan.
…student call Zhangsan
'The student who didn't come yesterday who likes to come to class very much is called Zhangsan.'

b. *__DRC__ D __RRC__ N

*[$_{RC}$Hen xihuan shang ke de] na-ge [$_{RC}$ zuotian meiyou lai de]
very like go class de that-cl yesterday not come de
…xuesheng jiao Zhangsan.
…student call Zhangsan

del Gobbo 2005

Finally, a similar contrast has been reported for the Athabaskan languages Dëne Sųłiné & Tłı̨cho Yatiì in Saxon & Wilhelm 2010. In both languages RRC's follow the head noun. In contrast, when an RC serves to characterize an entity, it precedes the head noun. The latter construction is illustrated in (48) and (49).

(48) Dëne Sųłiné
[tsádhëth kanı̨dhënı] dëné
beaver.furseek.nom person.pns
trapper' (lit. 'fur-seeking person')

(49) Tłı̨cho Yatiì
[yet'à edaa] soòmbaà
3.with live.nom money.pns
'the money that she lives on

According to Saxon & Wilhelm 2010, this construction is a productive way of creating new words. As such it is common in dictionaries where lexicalized, conventionalized instances are recorded.

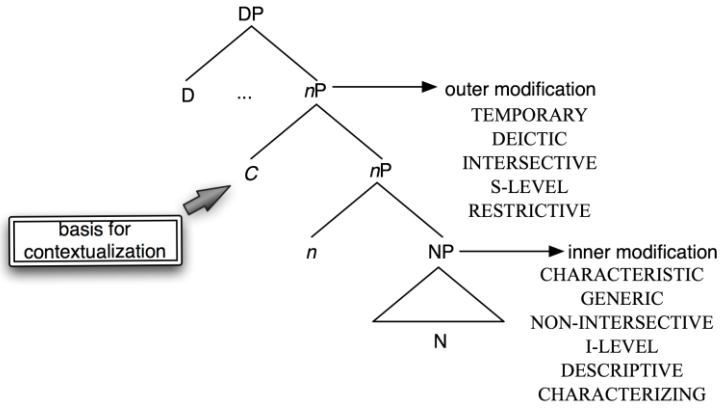
We have now reviewed a number of instances where a difference in the structural position of a modifier (adjectival or RC) correlates with a semantic difference. These differences are summarized in table 6.

Table 6. Semantic differences between outer and inner modifiers

outer	**inner**
TEMPORARY	CHARACTERISTIC
DEICTIC	GENERIC
INTERSECTIVE	NON-INTERSECTIVE
S-LEVEL	I-LEVEL
RESTRICTIVE	DESCRIPTIVE
RESTRICTIVE	CHARACTERIZING

On the analysis proposed in (5), repeated below , the structural difference leads to these interpretational differences as follows. Modifiers that are introduced below *n*P (ie., at NP) cannot access contextual information. Consequently, they cannot be temporary, deictic, or intersective. These types of modifiers require contextualization. Since the temporary modifier is episodic, it requires contextual information; deictic modifiers similarly require access to contextual information; and finally intersective modification requires access to contextual information to create the set of alternatives. By hypothesis, the same holds for S-level as well as restrictive modifiers. In contrast, the modifiers that are introduced below *n*P and which cannot access contextual information must be interpreted either as characteristic, generic, or non-intersective modifiers. Since I-level predicates can by definition not be restrictive it follows that they pattern with non-intersective modification. By hypothesis, the same holds for descriptive and characterizing RC's. This is schematized in (50).

(50) Two attachment sites for modifiers



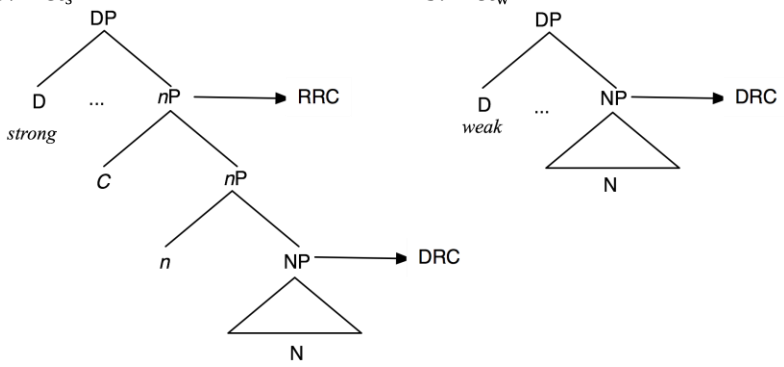
We have now seen that there is independent evidence for two sites of attachment for modification. The higher modifier position requires contextual information for interpretation, while the lower position does not. On the analysis

developed here the different sites of attachment correspond to *n*P and NP, respectively. Modifiers attaching to *n*P can access contextual information because *n*P hosts C, which I argue serves as the basis for contextualization. In contrast, the lower modifier position NP is not compatible with contextual information because C is not yet introduced.

4.2 Det_w cannot associate with RRC's: A structural account

The analysis developed so far allows us to understand the fact that DPs headed by Det_w cannot host RRC's but only DRC's. Recall the analysis of Det_w and Det_s developed in section 3.1. I have proposed that Det_w selects for NP's rather than *n*P's. As such they lack the basis for contextualization. In contrast, Det_s selects for *n*P and is therefore compatible with discourse contextual information (such as deixis, anaphora, and contextually determined sets of alternatives). In combination with the analysis of RC's I have proposed above, we can now derive the distribution of RC's. Det_s is compatible with both types of positions and thus with RRC's and DRC's. In contrast Det_w is only compatible with DRC's since it lacks the position which hosts RRC's (*n*P). This is schematized in (51).

(51) a. Det_s b. Det_w



We have now developed a simple analysis for the incompatibility of Det_w with RRC's: it simply lacks the functional layer (*n*P) required for restrictive modification. In particular, RRC's are used to eliminate potential discourse referents. Consequently, they require a set of alternatives of other individuals satisfying the property denoted by N which are potential candidates for discourse referents. On the analysis developed here, C is required for this contextually constraint set of alternatives, and since C is associated with *n*P, RRC's require *n*P.

4.3 Accounting for the differences between RRC and DRC

So what does this analysis have to say about the differences between RRC and DRC, which are summarized in table 7.

Table 7. Differences between RRC and DRC

	function	extraposition	intonation	introduced by
RRC	integral	□	2 MajorP	(d) w
DRC	descriptive	□	1 MajorP	(*d) w

We have already seen why there is a difference in function. DRC's cannot serve to restrict the reference, since restrictive modification requires a basis for contextualization (C in our analysis), which is absent in DRC's. What about the other properties that differentiate RRC's from DRC's. While I don't have a detailed analysis for the impossibility of DRC's to extrapose, I suspect that this is prosodically conditioned. In particular, we have seen that a DRC forms one major phrase with its head. Suppose that this is in fact a requirement for DRC's. If so, the impossibility for extraposition is derived: linear adjacency is a necessary condition for the formation of a major phrase.

Finally, we turn to the difference in what may serve to introduce the RC. RRC's can be introduced by a relative pronoun and the complementizer *wos* whereas DRC's do not allow for relative pronouns but are instead limited to the use of the complementizer *wos*. I propose that the incompatibility of DRC's with full relative pronouns has to do with the syntax of relative pronouns. In particular, I follow Wiltschko 1998 in assuming that relative pronouns contain an elided NP, as in (52). In other words, I adopt a matching analysis for RC's (Sauerland 1998, 2002).

(52) Relative pronoun $[_{DP}\ der_s\ Ø_{nP}]$

Wiltschko 1998

Since elided constituents are inherently anaphoric (Williams 1997) we predict that the elided nominal complement must be *n*P rather than NP. This follows from our assumption that NP cannot be anaphoric. It thus follows that the antecedent of the elided *n*P must also be an *n*P, but this is precisely the projection which is absent in the head of a DRC: weak determiners select for NP, not *n*P.

This analysis predicts that only Det_s but not Det_w can function as a relative pronoun because only Det_s allows for *n*P, which is necessary to establish the anaphoric relation.[7] This prediction is borne out as shown in (53).

(53) a. dea Briaftroga, **dea/*da** (wos) bei uns austrogt
det_s mailman det_s/det_w comp at us delivered

[7] See Wiltschko 1998 for additional reasons.

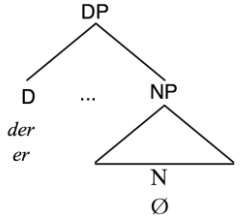
‘the mailman who delivers our mail’
b. die Müch, **die/*d** (wos) d gestan kauft host
det_s milk det_s/d_w comp you yesterday bought have.2sg
‘the milk you bought yesterday’
c. des Auto, **des/s** (wos) si da Hons kauft hot
det_s car det_s/det_w comp refl det_w Hans bought has.3sg.
‘the car John bought’

In fact, as expected on the present analysis, it is a general property of Det_w that it cannot be used as a pronominal form because it doesn’t license an elided nominal complement. This is shown in (54).

(54) a. *Gestan is {da/d/s} kumma
yesterday is $det_{w.masc/fem/neut}$ come
b. Gestan is {dea/die/des} kumma
yesterday is $det_{s.masc/fem/neut}$ come
‘Yesterday, he/she/it came.’

Note that Wiltschko’s 1998 analysis of pronominally used definite determiners (i.e, Det_s with an elided *n*P complement) is generalized in Elbourne 2005 for all pronouns, including personal pronouns. Accordingly, the proper syntactic representation for personal pronouns like *er* (‘he’) and d-pronouns like *der* would be the same, as shown in (55).

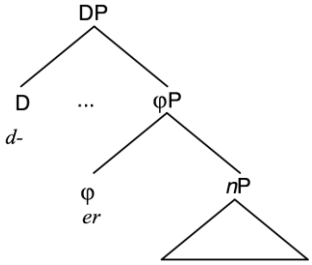
(55) Elbourne’s 2005 analysis of pronouns



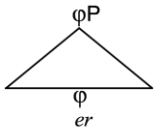
This contrasts with Wiltschko’s 1998 analysis according to which only D-pronouns contain a D position with an elided NP, while personal pronouns are φPs lacking an NP complement, as in (56).

(56) D-pronouns vs. personal pronouns (Wiltschko 1998)

a. D-pronoun



b. personal pronoun



Note that on Elbourne's analysis, there is no principled reason as to why d-pronouns but not personal pronouns can function as relative pronouns.

(57) a. Der Mann, **der/*er** gekommen ist.
the man det/pron come is
'the man who came'

Since both types of pronouns have the same syntactic structure, they should also have the same distribution, contrary to fact. Wiltschko's 1998 analysis, however, derives this contrast from the presence vs. absence of an elided NP complement.

Further evidence against a generalized DP+elided NP analysis for pronouns comes from the fact that only personal pronouns but not d-pronouns can be bound (Wiltschko 1998, Déchaine & Wiltschko 2002).

(58) Jeder Mann glaubt dass ***der$_i$/er$_i$*** stark ist.
every man believes that *det/pron strong is
'Every man believes he is strong.'

In sum, I have shown that we can derive the inability of Det_w (as well as personal pronouns) to function as relative pronouns: neither Det_w nor personal pronouns are associated with an elided *n*P, which is however a prerequisite to establish an anaphoric dependency. As a consequence, we have to reject Elbourne's 2005 generalized D+elided NP structure for pronouns.

5 Previous analyses

On the proposal developed here, the difference between Det_s and Det_w is couched in terms of their selectional properties: Det_s selects for *n*P while Det_w selects for NP and as such lacks the basis for contextualization and the layer for outer

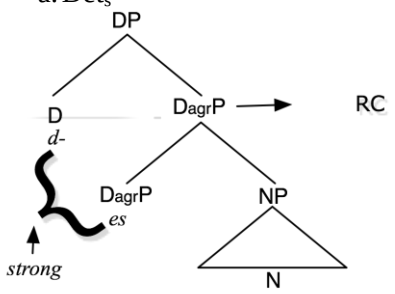
modification. This contrasts with the syntactic analysis of Brugger & Prinzhorn (1996) according to which the two determiners differ in the position they occupy (section 5.1). It also contrasts with a syntactic analysis developed in Leu 2008 for the definite vs. demonstrative use of German determiners (section 5.2). Finally, I will also compare the present analysis with a recent semantic analysis developed in Schwarz 2009 (section 5.3).

5.1 Brugger & Prinzhorn 1996

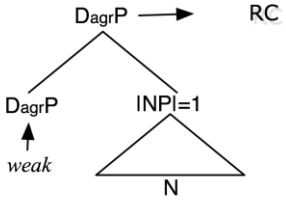
According to Brugger & Prinzhorn 1996 (henceforth B&P), Det_w and Det_s are associated with two different syntactic positions. In particular, they propose that Det_s is syntactically complex in that it associates with both the head of DP and the head of a determiner agreement position (D_{agr}). In contrast, Det_w is analyzed as syntactically simplex associating with the lower position (D_{agr}) only. This is shown in (59).

(59) Two different positions for Det_s and Det_w

a. Det_s



b. Det_w



The uniqueness condition associated with Det_w stems from a restriction that it places on its NP complement. Namely, it requires for the cardinality of NP to equal 1 in D (as schematized in (59)b).

On this analysis, the reason for the inability of Det_w to license an RRC is as follows. They argue that all RC's associate with $Det_{agr}P$. The interpretation of the RC depends on which determiner is used. In the case of Det_s, the RC is in a position where it is within the scope of the determiner. As a consequence, the RC is interpreted as a common noun modifier in the sense of Partee 1975, i.e., it functions as an RRC. In contrast, in the case of Det_w, the RC is in a position where it takes scope over the entire DP, and is thus interpreted as a term modifier, i.e., it functions as an ARC. Thus, according to this analysis, it is the position of the determiner that differs (D vs. D_{agr}) whereas the RC is always associated with the same position. This differs from the analysis developed here according to which it is the position of the RC that differs (NP vs. *n*P) along with

the selectional requirements associated with weak and strong determiners. The syntactic position of the two determiners however is identical on my analysis.

It is the purpose of this subsection to compare the two analyses. I show that the analysis proposed here has advantages over the one proposed by B&P.

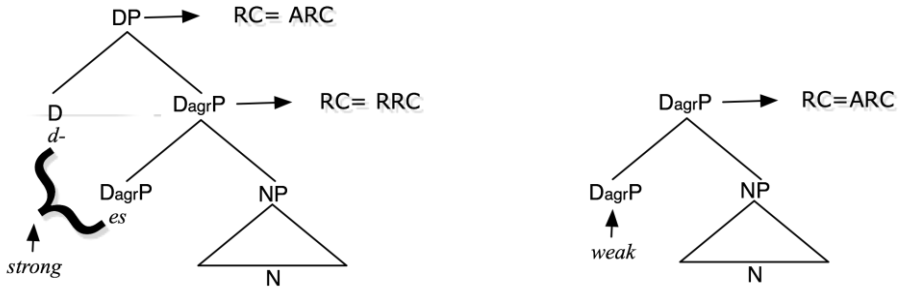
First, as Schmitt 2006 points out, Det_s is compatible with ARC's, as shown in (60). This is unexpected on the analysis in B&P because anytime a strong determiner is used the RC will be in its scope and should therefore be restrictive.

(60) a. des Buach des (was) da Chomsky gschriem hat…
det_s book det_s comp det_w Chomsky written has
'The book Chomsky wrote….'

b. des Buach des (was) da Chomsky gschriem hat…
det_w book det_s comp det_w Chomsky written has
'The book Chomsky wrote….

On the basis of these data, we must conclude that B&P will have to assume at least two distinct positions for RC's: $D_{agr}P$ and DP. In the case of Det_s these two positions are available allowing for RRC's associated with $D_{agr}P$ as well as ARC's associated with DP ((61)a). In contrast, in the case of Det_w, only $D_{agr}P$ is available. However, since in this position RC is above Det_w it follows that it must be interpreted as a term modifier i.e., it functions like an ARC ((61)b).

(61) a. Det_s b. Det_w



In sum, the B&P analysis minimally has to incorporate the existence of a second position for RC's. In addition, I have shown that DP's introduced by Det_w allow modification by an RC which is not appositive. Moreover, we have seen evidence that DRC's occupy a position lower than RRC's. This suggests that the B&P analysis has to be further accommodated to allow for DRC's; presumably by allowing RC modification of NP. Thus, the analysis of RC's has to incorporate distinct positions for different types of RC's, just like the one

developed here. As suchit is not more economical than the analysis developed here.

The question remains as to whether we have to incorporate two distinct syntactic positions for the two distinct determiners. In other words, is there independent evidence that would require us to revise our analysis? One of the crucial pieces of evidence for B&P are the extraction facts discussed in section 3.1. (example (25)). Recall that these facts can equally be captured by the analysis developed here: Det_s selects for *n*P, which functions as a phase and therefore does not allow for subextraction.

In what follows, I show that the analysis according to which the two determiners occupy two distinct syntactic positions makes incorrect predictions for the morphology of the determiners. Consider again the paradigms of Det_s and Det_w, respectively. It is true that strong determiners are morphologically complex, as predicted by the B&P analysis: all strong determiners have an initial *d-*, which B&P analyze as associating with D. It is also true that the remainder of the determiner can be analyzed as agreement morphology (see also Wiltschko 1998).

Table 8. Strong determiners are morphologically complex

Det_s	M.SG	FEM.SG	NEUT.SG
nom	*d-ea*	*d-ie*	*d-es*
acc	*d-en*	*d-ie*	*d-es*
dat	*d-em*	*d-ea*	*d-em*

On the B&P analysis we would expect that all weak determiners have the form of these agreement endings. In other words, we would expect that Det_w can be derived by subtracting the *d-* morpheme from Det_s. Thus, we expect the paradigm given in the left half of table 9, which crucially differs from the existing paradigm, given in the right half of table 9.

Det_w	PREDICTED PARADIGM				EXISTING PARADIGM		
	M.SG	FEM.SG	NEUT.SG		M.SG	FEM.SG	NEUT.SG
NOM	*ea*	*ie*	*es*		***da***	***d***	*(ə)s*
ACC	*en*	*ie*	*es*		*(ə)n*	***d***	*(ə)s*
DAT	*em*	*ea*	*em*		*(ə)m*	***da***	*(ə)m*

Table 9: weak determiner paradigm

In comparing the predicted with the existing paradigm, we can identify two problems. First, there are some existing Det_w which spell out the *d-* morpheme rather than the agreement morphology (feminine nominative and accusative forms). And there are some existing Det_w which spell out *d-* plus a reduced form

of the agreement ending (*da* for masculine nominative and feminine dative). These unexpected forms are set in boldface in table 10.

Second, the vowel we find in the agreement morphology differs from the one in the weak determiner. Consequently the form of the determiner is not predictable on the basis of a morpho-syntactic decomposition. Take for example the neuter form. On Det_s, the agreement morphology is formed with a full vowel /e/ while on Det_w it is formed with schwa /ə/ if there is a vowel present at all (i.e., the presence of schwa is optional, indicated by the brackets in table 10).

In sum the morpho-syntactic decomposition of strong determiners does not predict the correct morphology of weak determiners.

But how does the analysis developed in section 3.1 fare in light of these facts? Since the two determiners occupy the same position (D), no morpho-syntactic decomposition is possible. Thus, we have to conclude that the morphological weakening of the determiner is phonologically conditioned. And in fact there is a straightforward phonological rule that can derive the observed forms. In particular, Det_w can be derived from Det_s by means of the rule in (62).

(62) Det_w spells out the coda of Det_s if there is one, otherwise Det_w spells out the onset of Det_s.

Thus, there is no morpho-syntactic evidence that the two determiners differ in their morpho-syntax. Instead, they differ in their phonology such that Det_w is derived from Det_s. The fact that Det_w is derived from Det_s by means of a phonological rule is expected on the analysis that they occupy the same syntactic position. It would however be an unexpected accident on the analysis according to which Det_s is syntactically more complex than Det_w.

Finally, the 3rd assumption that differentiates the B&P analysis from the one developed here has to do with the way the uniqueness condition is derived. B&P posit an explicit constraint placed on the complement NP, namely that its cardinality be equal to 1 in the domain of discourse. In contrast, under my analysis, the uniqueness condition is a byproduct of the inability to contextualize: no contextual information can be supplied to determine the discourse referent. There are two contexts of use compatible with DP's whose referent cannot be determined by the discourse context. i) The *generic use*: All individuals with the property denoted in N are referred to. ii) The *unique use.* If there is only one individual that satisfies the property denoted by N in the world of discourse then automatically all individuals in the world of discourse are referred to.

Evidence that Det_w cannot be associated with a constraint on the cardinality of NP comes from the fact that it may co-occur with plural nouns, as shown in (63).[8]

(63) D' Gösn san heit wieda lästig
det_w mosquitos are today again annoying
'The mosquitos are annoying again today.'

In sum, the syntactic analysis proposed by B&P runs into several problems. First, it makes the wrong predictions for the distribution of ARC's and therefore needs to incorporate the assumption that different RC's attach at different layers of the functional projection. Second, it makes the wrong predictions for the morphological form of Det_w. And third, the possibility for plural NP complements is unexpected.

5.2 Leu 2008

Leu 2008 explores the morpho-syntax of definites and demonstratives in a variety of languages (Germanic and beyond) but with special emphasis on Swiss German. He starts with two interrelated observations. First, in several languages (including German) the demonstrative is homophonous with the definite determiner. The difference between the two forms is in terms of stress: on the demonstrative reading the determiner is stressed (64)a, while on the definite reading stress falls on the noun (64)b.

(64) *Standard German*
a. dér Tisch DEMONSTRATIVE
det.masc table
'the table'
b. der Tísch DEFINITE
det.masc table
'the table' (Leu 2008: 15 (3))

The second observation has to do with the interaction between the determiner and adjectives. Consider the examples in (65) from Norwegian. The suffixal determiner is used with unmodified nouns and receives a definite interpretation (65)a. In the presence of an adjective, the pre-nominal determiner

[8] Note that we have to assume that NumP bust be transparent for the type of nominal complement (*n*P vs. NP). That is, even though NumP intervenes, D must still have access to select the categorial identity of the nominal comeplement. That such a mechanism is independently needed is argued in Grimshaw 1991 and forms the basis for the concept of an *extended projection*.

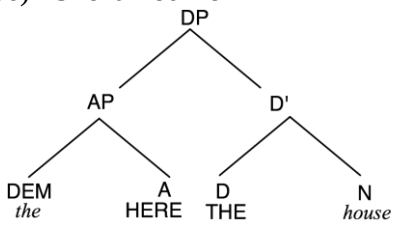
is used. In this case, the determiner may but need not be interpreted as a demonstrative (65)b. Finally, in the absence of an adjectival modifier, the prenominal determiner must be interpreted as a demonstrative (65)c.

(65) *Norwegian*

a. hus-et house-DEF	DEFINITE
b. de-t svarte hus-et that/the black house-DEF	OPTIONALLY DEMONSTRATIVE
c. de-t hus-et that house-DEF	OBLIGATORY DEMONSTRATIVE

Leu interprets this pattern as follows. Suppose the use of the prenominal determiner always indicates the presence of an adjectival modifier. If so, the use of the prenominal determiner in (65)b would indicate the presence of such an adjectival modifier. Leu 2008 proposes that this is indeed the case and posits a silent modifier with deictic force (HERE; following work by Kayne, capitalization indicates silence), as schematized in 0. According to this structure, the prenominal determiner occupies a phrasal position within a constituent headed by an adjective (either overt or covert). This structure is in line with research which treats demonstratives as (adjectival) phrases (Dryer 1992, p.120ff, Delsing 1993, chapter 4.3), Chomsky 1995, p.338, Bernstein 1997, p.93, Elbourne (2005 p.4, Julien 2005 among others). Note that to make this work, Leu 2008 has to assume a determiner position D, which in English is occupied by a silent determiner (THE) but which in Norwegian is spelled out in the form of the determiner which suffixes onto the noun (cf. (65)). Thus on this analysis double definite marking is expected.[9]

(66) Silent modifier



[9] The analysis developed here does not necessarily predict the existence of double definiteness. It is however interesting to note that according to Julien 2003, the suffixal determiner is generated in *n*. If so, double definiteness cannot be taken as evidence for two determiner positions.

While the contrast Leu 2008 seeks to capture is different from the one I am interested here there are nevertheless important parallels that deserve attention.

Consider the contrast between the two types of determiners. The contrast I am considering is between ananphoric/deictic determiners (Det_s) and determiners used for situationally unique or non-referential determiners (Det_w). The contrast Leu 2008, is considering is between (deictic) demonstratives (phrasal adjectives) and simple definites. That these two contrasts cannot be reduced to one can be seen on the basis of the fact that Austro-Bavarian has both contrasts. That is, there are in fact three types of determiners. In addition to Det_w and Det_s, we also observe a contrast between stressed and unstressed Det_s. The former is mostly used as a (deictic) demonstrative while the latter is used in anaphoric contexts (i.e. as a definite).

(67) a. Dea Schnóps is teia woan.
Det_s Schnaps is expensive become
'The Schnaps got expensive.'
b. Déa Schnops is teai woan.
det_s Schnops is expensive become
'This Schnaps got expensive.'

Note that the presence or absence of deictic force is not the only difference between stressed and unstressed Det_s. Stress on Det_s is associated with contrastive focus and consequently introduces a contrast set. Thus, the sentence in (67)b is only felicitous in a context where other types or bottles of Schnaps are under consideration.

Since Leu 2008 builds the deictic component into the stressed determiner we expect it to be the basic (and stable) reading. However, this is not the case. There is a non-deictic use of stressed Det_s as shown in (68).

(68) Context: *A and B are having a discussion about mailmen. A complains that all mailmen are lazy and that they bring the mail really late in the day. B objects:*
DEA Briaftroga dea wos bei UNS austrogt kummt imma pünktlich.
det mailman pron comp at us delivers comes always on.time
'*The mailman who delivers in our neighbourhood is always on time.'*

The use of a stressed non-deictic determiner requires a modifer, in this case a restrictive relative clause. Crucially, this type of determiner still requires a contrast set. In (68), the contrast is specified by the relative clause, which itself must contain a contrastively stressed element (UNS in (68)). This is responsible for the special intonation associated with this type of clause, which is known as the *hat contour* (see Bühring 1997).

Note for completeness that on the analysis developed here we predict that descriptive relative clauses cannot contain focus which would specify a contrast set. This is because contrast sets require C which is not available with $Det_{w.}$ This prediction is borne out as shown in

(69) #da Brieaftroga wos bei UNS austrogt is in pension
det mailman pron comp at us delivers comes always on.time
'*The mailman who delivers in our neighbourhood is always on time.*'

Given that contrastive stress always introduces a contrast set it is not obvious that we need a special syntax or semantics for stressed Det_s that goes beyond the syntax and semantics we need for contrastive focus (Rooth 1985, Bühring 1997).

5.3 Schwarz 2009

Schwarz 2009 proposes a detailed semantic analysis of the two definites in German within the framework of situation semantics (Kratzer 2007). Before I compare his analysis with the one developed here, a few words are in order about the empirical domain.

5.3.1 Contracted P+Det_w differs from Det_w

Schwarz investigates the use of Det_w in Standard German, where it is limited to contexts immediately following a preposition. In such contexts Det_w forms a unit with the preposition. Crucially, however, in formal registers, contraction is only available with a limited set of prepositions and definite articles in certain case and gender-marked forms. Citing the Duden Grammar of German (Eisenberg, Gelhaus, Henne and Wellmann 1998, p. 323) Schwarz 2009 lists the following prepositions as allowing contractions (see also Hartmann 1978, Hartmann 1980, Haberland 1985, Cieschinger 2006, Waldmüller 2007).

(70) an, auf, bei, durch, für, hinter, in, neben, über, um, unter, von, vor, zu

Consider for example (71). While the sentence in (71)a is compatible with a context in which there is more than one house salient in the context and the definite anaphorically, or deictically picks out one particular house, the sentence in (71)b is only felicitous if there is only one house salient in the discourse context. As such the contracted determiner appears identical to Det_w examined thus far.

(71) a. Hans ging zu **dem** Haus.
H. went to det_s house
'Hans went to the house.'
b. Hans ging **zum** Haus.
H. went to.det_w house
'Hans went to the house.'

According to most treatments of the two different types of determiners, the determiner which appears contracted to the preposition in Standard German is treated on par with the weak determiners which are restricted to colloquial speech and dialects. Consider in this respect Schwarz' 2009 reference to Schaub 1979, who notes that colloquial speech in many dialects allows a far wider range of contracted forms. On the one hand, there are more preposition-determiner contractions possible. On the other hand, reduced forms in spoken language of the definite article also appear after words of other category types, e.g., after auxiliaries (72)a, complementizers (72)b, and pronouns (72)c.

(72) a. Ich hab**'s** Fahrrad vergessen.
I have=det_w bike forgotten
'I have forgotten the bike.'
b. Peter ist sauer weil**'s** Zimmer so klein ist.
Peter is mad because=det_w room so small is
'Peter is mad because the room is so small.'
c. Hans hat mir erzählt dass er**'s** Haus verkauft hat
H. has me told comp he=det_w house sold has.
'Hans told me that he has sold the house.'

Schwarz 2009: 17 (13)

The determiner in contracted preposition+determiner forms can however not be equated with Det_w elsewhere. While it is certainly the case that the context of use for contracted preposition+determiner forms parallels that of weak determiners, they differ in their morphological and prosodic properties. Consider first the contraction of dative determiners with the preposition *zu*. While the masculine and neuter forms are indeed identical to the contracted form elsewhere (73)a-b, this is not the case for feminine forms (73)c. Here the contracted form is *–r* which cannot be used elsewhere. Instead, Det_w is *da*.

(73)

	P+D_{DAT}	**$D_{w.DAT}$**
a. MASC	I bin **zum** Hund hi	I hob **m** Fronz a Buach gem
	I am to-det_w dog there.to	I have det_w Fronz a book given
	'I went to the dog.'	'I gave Franz the book.'

b. NEUT	I bin **zum** arbeiten da	I hob **m** Kind a Buach gem
	I am to-det_wwork dog	I have det_w child a book given
	'I'm here to work.'	'I gave the child the book.'
c. FEM i)	I bin **zur** Schui hi	*I hob **r**'Maria a Buach gem
	I am to-det_w school there.to	I have det_w Maria a book given
ii)	I bin **zu da** Schui hi.	I hob **da** Maria a Buach gem
	I am to det_w school there.to	I have det_w Maria a book given
	'I walked to the school.'	'I gave Mary the book.'

Moreover, not all prepositions allow for contraction with all determiners. For example, the preposition *in* can contract with the masculine dative determiner to form *im*; and in this case the contracted form is the same as Det_w elsewhere (i.e., *m*). However, the feminine determiner does not participate in this contraction. In particular, given the pattern we have observed with *zu* in (73), we would expect the contracted form with the feminine determiner to surface as *ir*. That is, just like *zu + der = zur*, we would expect *in + der* to surface as **ir*, which is however unattested. Instead the regular Det_w is used in the dialect, while no special form is available in Standard German

(74)	**P+D_{DAT}**	**$D_{w.DAT}$**
a. masc	I bin **im** Keller	I hob **m** Fronz s'Buach gem
	'I am in the cellar.'	'I gave Franz the book.'
b. fem	*I bin **ir** Kich.	*I hob **r**'Maria a Buach gem
	I bin in **da** Kich	I hob **da** Maria a Buach gem
	'I am in the kitchen.'	I gave Mary the book.'
	in + der = *ir	

The morphological differences between the contracted determiners and Det_w elsewhere are summarized in table 9. In the dialect investigated here, Det_w is available for all determiners independent of gender and case. In contrast, the form of the determiner contracted to the preposition in Standard is not always the same as Det_w and it is not available across all genders and not for all prepositions.

Table 9. Det_w vs. P-D contraction

Det_w	DET_w FORM				CONTRACTED FORM		
	M.SG	FEM.SG	NEUT.SG		M.SG	FEM.SG	NEUT.SG
ACC	*%(i)n*	*%d*	*%s*	*in*	***%inn***	***%ind***	*ins*
DAT	*%(i)m*	*i%da*	*%(i)m*	*in*	*im*	*--*	*im*
				zu	*zum*	***zur***	*zum*

Finally, there are also prosodic differences between the determiner contracted to the prepositon and Det_w elsewhere. In particular, contracted forms must encliticize (i.e., they must form a phonological word with the preposition) as in (75)a. They can however not pro-cliticize (i.e., form a phonological word with the following word), as in (75)b.. In contrast, Det_w may either encliticize to the preceding word (76)a or pro-cliticize to the following word (76)b.

(75) P+DET_W

a. I bin **zu'm** Haus gegangen *encliticization*
   I am to-det_w house walked
   'I want to the house.'
b. *I bin zu **m'Haus** gegangen *procliticization*
   I am to det_w-house walked

(76) DET_W

a. I **hob'm** Fronz a Buach gem *encliticization*
   I have-det_w Franz a book given
   'I gave Franz a book.'
b. I hob **m'Fronz** a Buach gem *procliticization*
   I have det_w-Franz a book
   'I gave Franz a book.'

This establishes that determiners contracted with prepositions in Standard German, cannot be equated with the weak determiners explored in this paper (contra Schwarz 2009, Waldmüller 2007).

5.3.2 The semantics of Det_w vs. Det_s

The basic insight behind Schwarz' 2009 analysis is to make use of the notion of *domain restriction*, couched within the framework of situation semantics (in particular, the version presented in Kratzer 2007). In particular, Schwarz argues that determiners introduce a *situation pronoun* (which takes the place of the domain restriction in the sense of Westerstahl 1984). On this analysis the context of use for Det_w depends on the options for interpreting the situation pronouns they introduce. In particular, "*situation pronouns can stand for a contextually salient situation (by receiving a value via the assignment function), be identified with the topic situation (via a Σ-binder below topic), or be bound by a quantifier over situations*" (Schwarz 2009: 75). The uniqueness requirement associated with Det_w is analyzed as a presupposition (i.e., Schwarz adopts a Fregian approach towards definiteness). To account for the difference between Det_s and Det_w, he postulates for Det_w an additional index argument that introduces an individual variable (which is itself associated with a familiarity condition; see Heim 1982).

As such this index argument is responsible for the ability of Det_s to be used anaphorically. This amounts to building a (phonologically null) pronominal element into strong-article definites (see also Elbourne (2005) and Neale (2004) along with an identity function. In sum, Schwarz' 2009 lexical entries for Det_s and Det_w are given in (77)a and b, respectively. Both entries have a situation pronoun (s_r) while only Det_s has an additional individual variable (y) responsible for anaphoric uses.

(77) a. Det_s: $\lambda s_r\, \lambda P.\lambda y.\iota x.P(x)(s_r)$ & $x=y$
b. $Det_{w:}$ $\lambda s_r.\, \lambda P.\, \iota x.P(x)(s_r)$

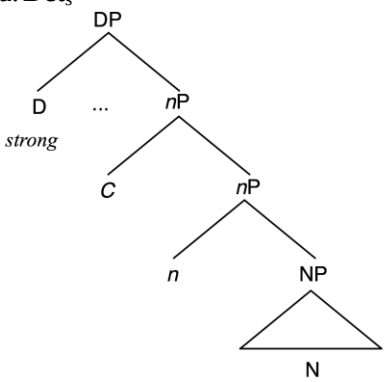
We are now in a position to explicitly compare Schwarz' 2009 semantic analysis with the one developed here. Crucially, Schwarz claims that both the situation pronoun associated with both determiners as well as the individual variable associated with Det_s are represented syntactically (in the form of covert abstract pronouns). In his account situation pronouns replace the classic C-variables responsible for domain restriction on quantifiers (Westerstahl 1984, van Fintel 1994).

Let us assume that what I have called the basis for contextualization (C) corresponds to the situation pronoun in Schwarz' analysis. If so, there are two non-trivial differences between Schwarz and my analysis. First, I have argued that DP's containing Det_s only, but not DP's containing Det_w are associated with C, while Schwarz argues that situation pronouns are associated with both Det_s and Det_w. Secondly, on my account, C is associated with *n*P while Schwarz argues that the situation pronoun is directly associated with the determiner position.[10] This is schematically represented in (78) and (79) respectively and summarized in table 10.

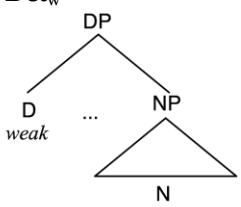
[10] Schwarz 2009 is not explicit about the syntactic position of the situation pronoun or the anaphoric index variable. For concreteness, I assume that both of them are associated with the specifier of DP, rather than the head D. This is consistent with their pronominal status which implies phrasal syntax, which is only compatible with the specifier position and not with the head position.

(78) Present proposal

a. Det_s

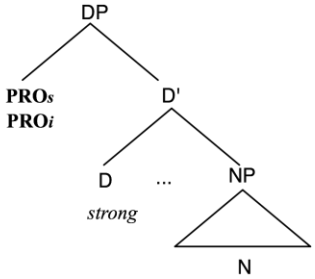


b. Det_w



(79) Schwarz' 2009 proposal

a. Det_s



b. Det_w

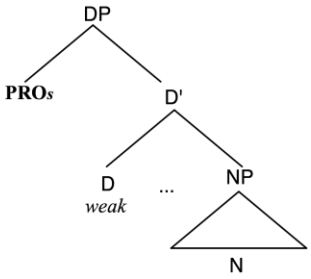


Table 10. Schwarz 2009 vs. this paper

	Schwarz 2009	present proposal
C present in DP headed by Det_w	□	□
C present in DP headed by Det_s	□	□
locus of association of C	D	*n*

Let me briefly point out some advantages of the present analysis in which Det_w lacks the basis for contextualization (C or PRO_s). First, on my account nothing special has to be said about the generic or idiomatic use of Det_w. It is precisely the absence of contextual restriction which is responsible for a generic interpretation of DP's. Similarly, the idiomatic interpretation of Det_w is one in which no contextual restriction is available: in this case it doesn't even involve reference to a particular individual.

Another piece of evidence suggesting that Det_w may not be associated with contextual restriction (in the form of a situation pronoun) stems from the following consideration. Kratzer 2004 suggests that in German dialects (including Bavarian), situation pronouns may be overtly spelled out in the form

of *da*. She gives the following examples (among others) from a Bavarian TV-show.

(80) a. Wirst doch net streiten wegen [[den zwei Billietten] **da]**
will.2sg prt not fight because det_s two tickets da.
'You won't fight over the two tickets, will you?'
b. Des wean sich saudumm anhör'n wenn
That would refl. real.stupid sound if
… [[die Wölfe] **da**] zwitschern würden.
.. the wolves da chirp would
'That would really sound stupid if the wolves chirped.'
From Kratzer 2004

Suppose *da* does indeed spell out the situation pronoun associated with DP's. If so, we can use it as a test to distinguish between Schwarz' 2009 analysis of Det_w and mine. Schwarz 2009 analysis predicts that *da* is possible with DP's headed by Det_s as well as DP's headed by Det_w. In contrast, the analysis developed here predicts that *da* should not be possible with DP's headed by Det_w, but only with DP's headed by Det_s. As shown below, the analysis here makes the right predictions: *da* is possible with DP's headed by Det_s but not with DP's headed by Det_w.

(81) a. I hob in [[dem Wörtabuach] **do]** nochgschaut.
I have in det_s dictionary DA looked
Anaphoric: 'I looked in that very dictionary.'
Deictic: 'I looked in this dictionary here.'
b. *I hob [[**im Wörtabuach**] **do]** nochgschaut.
I have in.det_w dictionary DA looked
'I looked in the dictionary.'

(82) a. [[Die sun] **do**] is heit wieda hass.
det_{srong} sun DA is today again hot.
'The sun here is hot again.'
b. **[[D' sun] (*do)**] is heit wieda hass.
Det_w sun DA is today again hot.
Intended: 'The sun is hot again.'

If DPs headed by Det_w are not associated with a situation pronoun, then we correctly expect that *da* cannot spell it out overtly.

Next we turn to the second difference between Schwarz' 2009 analysis and the one developed here. This has to do with the locus of association of the situation pronoun: D in Schwarz' analysis and *n* in the present analysis. Note that

Stanley & Szabo (2000) argue that domain restriction associates with nouns rather than with determiners. In what follows I show that the two main arguments that have been put forth against this idea do not apply to the particular implementation of the Stanely & Szabo idea developed in this paper, namley that domain restriction (in the form of C) is associated with *n*P (rather than with NP).

The first argument against Stanley & Szabo's claim that domain restriction is associated with nouns stems from Breheney (2003) and has to do with non-intersective (intensional) modifiers, like *fake*.

(83) Every fake philosopher is from Idaho.

(Kratzer 2004)

Suppose the situation pronoun ranges over Americans. If so, the sentence in (83) may only get the interpretation in (84)a. However, if the domain restriction is associated with the noun itself, it is incorrectly predicted that the sentence would have the interpretation in (84)b.

(84) a. Every American fake philosopher is from Idaho.
b. Every fake American philosopher is from Idaho

Note, crucially however that Breheney's argument against C being associated with N does not equally apply to the analysis presented here. In fact, I have specifically argued that non-intersective modifiers are associated with NP, not *n*P, and therefore below the basis for contextualization (C).

Second, Gillon 2006 argues that in English, bare plural NP's are not associated with domain restriction. This is unexpected if nouns are indeed associated with domain restriction; it is however expected, if domain restriction is associated with the determiner position, which is absent in the case of bare plurals. However, on the present analysis, we may assume that bare NP's are indeed bare NP's with no *n*P. Therefore, Gillon's argument against associating C with NP does not necessarily carry over to the analysis presented here.

This concludes the comparison of the present approach to previous analysis of strong and weak determiners.

6 Conclusion

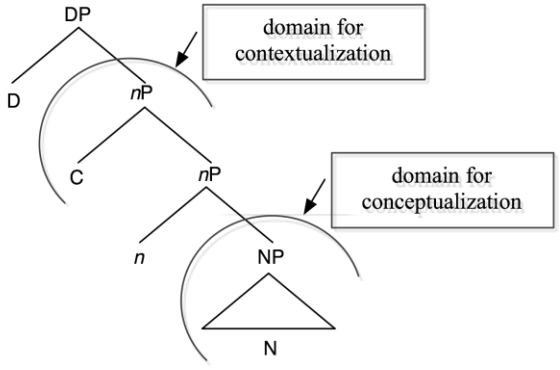
Starting with the standard assumption according to which restrictive relative clauses differ from appositive relative clauses in terms of their site of attachment (NP vs. DP, respectively), the core goal of this paper was to explore the possibility opened up by the explosion of functional projections within the nominal phrase. Is it possible to attach relative clauses at each of the functional

layers proposed in the literature, and if so, what semantic properties are associated with each of them?

Within this general question, we have explored the syntax and semantics of a particular type of relative clause which behaves neither like a restrictive, nor like an appositive relative clause. These are the so called descriptive relative clauses, which have been discussed mostly within the literature on Chinese (see del Gobbo 2005 for references). The main proposal I have developed here was that descriptive relative clauses attach at NP while restrictive relative clauses attach at *n*P.

An ideal testing ground to explore the difference between restrictive and descriptive relative clauses was provided by the Austro-Bavarian dialect of German. This dialect (like many other German dialects) has two distinct types of determiners: strong determiners can be used deictically, or anaphorically, while weak determiners are used for generics, idioms, non-referential DP's as well as in contexts where there is only one individual that satisfies the property denoted by N (i.e, situational uniqua). Since the latter context (situational uniqueness) is incompatible with restrictive modification, relative clauses associated with DP's headed by a weak determiner cannot be restrictive. To account for this difference I have proposed that strong determiners select for an *n*P complement while weak determiners select for NP. Since *n*P hosts C, which serves as the basis for contextualization, it follows that weak determiners cannot be used for referents whose identity has to be determined contextually (via anaphora, deixis, or restrictive modification). If the analysis developed here is on the right track, we may conclude that one of the core functions of *n* is to provide the basis for contextualization (in the form of C). Though the question remains as to what the precise syntactic and semantic properties of C are. This has to await future research. Moreover, given the properties associated with modification at the NP layer, we may conclude that NP serves as the basis for conceptualization (see Acquaviva 2009). This is illustrated in (85).

(85) Function of nominal layers



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References

Abney, S. 1987. The English noun phrase in its sentential aspect. Doctoral Dissertation, Massachussetts Institute of Technology.

Bernstein, J. 1997. Demonstratives and reinforcers in Romance and Germanic languages. Lingua 102:87–113.

Bittner, M. & K. Hale. 1991. Ergativity. Towards a Theory of a heterogeneous class. *Linguistic Inquiry* **27**:531–604.

Bolinger, D. 1967. Adjectives in English: Attribution and predication. Lingua 18:1–34.

Breheny, R. 2003, A lexical account of implicit (bound) contextual dependence, in R. B. Young and Y. Zhou (eds), Proceedings of SALT XIII, CLC Publications, Cornell University, Ithaca, NY, pp. 55–72.

Brugger, G. & M. Prinzhorn. Some properties of German determiners. ms., 1996.

Büring, D. 1997. *The Meaning of Topic and Focus: The 59th Street Bridge Accent*. Routledge, London.

Chomsky, N. 1995. The minimalist Program. MIT Press, Cambridge, Mass.

Cieschinger, M. 2006. Constraints on the contraction of preposition and definite article in German, B.A. Thesis, University of Osnabrück.

de Vries, M. 2006. 'The Syntax of Appositive Relativization: On Specifying Coordination, False Free Relatives, and Promotion,' *Linguistic Inquiry* 37.2, 229-270.

Déchaine, R.-M. & M. Wiltschko. 2002.Decomposing pronouns. Linguistic Inquiry 33:3, 409-442.

Del Gobbo, F. 2005. Chinese relative clauses: Restrictive, descriptive or appositive? In Contributions to the XXX Incontro di Grammatica Generativa, ed. L. Bruge, G. Giusti, N.Munaro, W. Schweikert, and G. Turano, 287–305. Venezia: Cafoscarina.

Delsing, L.-O. 1993. The Internal Structure of Noun Phrases in Scandinavian Languages. Doctoral Dissertation, Lund.

Dryer, M. 1992. The Greenbergian word order correlations. Language 68:81–138.

Ebert, K. 1971. Referenz, Sprechsituation und die bestimmten Artikel in einem Nordfriesischen Dialekt (Fering), PhD thesis, Christian-Albrechts-Universität zu Kiel.

Eisenberg, P., Gelhaus, H., Henne, H. and Wellmann, H.: 1998, Duden. Grammatik der deutschen Gegenwartssprache, Dudenverlag, Mannheim.
Elbourne, P. 2005. Situations and Individuals, MIT Press, Cambridge, MA.
Emonds, J. (1979) "Appositive Relatives have no properties," *Linguistic Inquiry* 10, 211–243.
Fabb, N. 1990. The difference between English restrictive and nonrestrictive relative clauses. *Journal of Linguistics* 26:57–78.
von Fintel, K. 1994, Restrictions on Quantifier Domains, PhD thesis, University of Massachusetts Amherst.
Gillon, C. 2006. *The Semantics of Determiners: Domain Restriction in Skwxwú7mesh.* PhD dissertation, University of British Columbia.
Grimshaw, J. 1991. Extended projections. Ms. Rutgers University. Benjamins. 115-133
Haberland, H. 1985. Zum Problem der Verschmelzung von Prposition und bestimmtem Artikel im Deutschen, Osnabrücker Beiträge zur Sprachtheorie 30, 82–106.
Hartmann, D. 1967. Studien zum bestimmten Artikel in 'Morant und Galie' und anderen rheinischen Denkmälern des Mittelalters, Wilhelm Schmitz Verlag, Giessen.
Hartmann, D.: 1978, Verschmelzungen als Varianten des bestimmten Artikels?, in D. Hartmann, H.-J. Linke and O. Ludwig (eds), Sprache in Gegenwart und Geschichte. Festschrift Für Heinrich Matthias Heinrichs., Böhlau, Köln, pp. 68–81.
Hartmann, D.: 1980, Über Verschmelzungen von Präposition und bestimmtem Artikel. Untersuchungen zu ihrer Form und Funktion in gesprochenen und geschriebenen Varietäten des heutigen Deutsch, Zeitschrift für Dialektologie und Linguistik 47, 160–183.
Hartmann, D. 1982. Deixis and anaphora in German dialects: The semantics and pragmatics of two definite articles in dialectal varieties, in J. Weissenborn and W. Klein (eds), Here and There: Cross-linguistic studies on deixis and demonstration, John Benjamins, Amsterdam, pp. 187–207.
Hawkins, J. A. 1978. Definiteness and Indefiniteness, Croom Helm, London.
Heim, I. 1982. The semantics of definite and indefinite noun phrases, PhD thesis, University of Massachusetts.
Heinrichs, H. M. 1954, Studien zum bestimmten Artikel in den germanischen Sprachen, Wilhelm Schmitz Verlag, Giessen.
Himmelmann, N. 1997, Deiktikon, Artikel, Nominalphrase: zur Emergenz syntaktischer Struktur, Niemeyer, Tübingen.
Julien, Marit. 2005. Nominal phrases from a Scandinavian perspective. Amsterdam: John Benjamins.
Julien, Marit. 2003. Double definiteness in Scandinavian. *Nordlyd* 31.1: 230-

244. [=Dahl, A.; Bentzen, K.; Svenonius, P. (eds.) Proceedings of the 19th Scandinavian Conference of Linguistics]

Kratzer, A. 2004. Covert quantifier restrictions in natural languages, talk given at Palazzo Feltrinelli in Gargnano June 11 2004.

Kratzer, A. 2007. Situations in natural language semantics, in E. N. Zalta (ed.), Stanford Encyclopedia of Philosophy, CSLI, Stanford

Krifka, M. 2008. Basic notions of Information structure. *Acta Linguistica Hungarica, Vol. 55 (3–4), pp. 243–276 (2008)*

Larson, R., and N. Takahashi. 2002. Order and interpretation in prenominal relative clauses. In MIT Working Papers in Linguistics 54: Proceedings of the Workshop on Altaic Formal Linguistics II, ed. Meltem Kelepir and Belkiz O¨ ztu¨rk, 101–120. Cambridge, MA: MITWPL.

Larson, R. 1998. Events and modification in nominals. In Proceedings from SALT VIII , ed.D. Strolovitch and A. Lawson. Ithaca, NY, Cornell University.

Leu, T. 2008, The Internal Syntax of Determiners, PhD thesis, NYU.

Lowenstamm, J. 2008. On little *n*, √, and types of nouns. In: J.M.Hartmann, V. Hegedus, and H.van Riemsdijk. (eds). Sounds of Silence. Empty elements in Syntax and Phonology. Elsevier.

Marantz, A. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. UPenn Working Papers in Linguisics 4:201–225.

Neale, S. 2004, This, that, and the other, in A. Bezuidenhout and M. Reimer (eds), Descriptions and Beyond, Oxford University Press, pp. 68–182.

Partee, B. 1975. 'Montague Grammar and Transformational Grammar,' *Linguistic Inquiry.* 6. No. 2 (Spring, 1975), pp. 203-300Published

Ritter, E. 1991. Two functional categories in noun phrases: Evidence from Modern Hebrew. In Syntax and Semantics 25. Perspectives on phrase structure, ed. Susan Rothstein, 37–62. New York: Academic Press.

Rooth, M. 1985. Association with focus. Doctoral dissertation, University of Massachusetts, Amherst.

Rooth, M. 1992. A theory of focus interpretation. In: Natural Language Semantics 1 : 75–116.

Sauerland, U. 1998. *The Meaning of Chains*. Ph.D. dissertation, Massachusetts Institute of Technology.

Sauerland, U. 2002. Unpronounced heads in relative clauses. In Kerstin Schwabe and Susanne Winkler (eds.), *The Interfaces, Deriving and Interpreting Omitted Structures*.Amsterdam: John Benjamins. 205–226

Saxon, L & Wilhelm, A. 2010. *The 'possessed noun suffix' and "possession" in two Northern Athabaskan languages.* Invited talk given at the Workshop on Nominal Dependents, Banff, May 8, 2010.

Schaub, S. 1979. Verschmelzungsformen von Präpositionen und Formen des bestimmten Artikels im Deutschen, in H. Vater (ed.), Phonologische Probleme des Deutschen, Narr, T¨ubingen, pp. 63–96.

Scheutz, H. 1988. Determinantien und Definitheitsarten im Bairischen und Standarddeutschen, Festschrift für Ingo Reiffenstein zum 60. Geburtstag, Kümmerle, Göppingen, 231–258.

Schmitt, V. 2006. Hessische Relativs¨atze. MA thesis, Universität Wien, 2007.

Schuster, M. and H. Schikola. Sprachlehre der Wiener Mundart. Österreichischer Bundesverlag, Wien, 1984.

Schwager, M. 2007. (Non-)functional concepts: Definite articles in Bavarian. Talk presented at the 8th Szklarska Poreba Workshop.

Schwarz, F. 2009. Two types of definites in Natural Language. PhD, Amherst.

Selkirk, E. 2005. Comments on intonational phrasing in English. In Frota, S., M. Vigario, & M. J. Freitas (eds.) Prosodies. (Selected papers from the Phonetics and Phonology in Iberia Conference,2003). Phonetics and Phonology Series. Mouton de Gruyter. 11-58.

Stanley, J. and Szabo, Z.: 2000, On quantifier domain restriction, Mind and Language 15(2), 219–261.

Stvan, L. 1998. The Semantics and Pragmatics of Bare Singular Noun Phrases. PhD thesis, Northwestern University, Evanston, Illinois.

Waldmüller, E. 2008. Contracted preposition-determiner forms in German: Semantics and Pragmatics. PhD, University Pompeu Fabra, Barcelona.

Westerstahl, D. 1984. Determiners and context sets, in J. van Benthem and A. ter Meulen (eds), Generalized Quantifiers in Natural Language, Foris, pp. 45–71.

Williams, E. 1997. 'Blocking and Anaphora,' *Linguistic Inquiry*, 28.4 577-628

Wiltschko, M. 1998. On the syntax and semantics of (relative) pronouns and determiners. *Journal of Comparative Germanic Linguistic s* 2:143–181.

Ziv, Y. & Cole, P. (1974). Relative extraposition and the scope of definite descriptions in Hebrew and English. In La Galy, M. W., Fox, R. A. & Bruck, A. (eds.) *Papers from the Tenth Regional Meeting of the Chicago Linguistic Society*, April 19-21, 1974. Chicago: Chicago Linguistic Society, pp. 772-786.