Redundancy and restriction in the derivation of relative clauses*

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Abstract The contrast between restrictive and appositive relative clauses (RCs) is often analyzed as a structural difference between low and high modification of a DP. In this paper, we consider how this familiar analysis might explain novel constraints on the distribution of two relative clause constructions in Santiago Laxopa Zapotec. "Bare relative clauses" (BRCs) in the language cannot modify proper names or demonstrative descriptions. Taking BRCs to be restrictive, we derive their constrained distribution from a semantic constraint on DP-internal RCs, No Redundant Restriction. In contrast, the freer distribution of "complex relative clauses" (CRCs) comes from their status as nominal appositives, higher modifiers free from this constraint. We conclude with a puzzle for this classical division: CRCs can exhibit atypical restrictive interpretations without violating No Redundant Restriction, raising questions about the nature of this constraint and posing a problem for a tight connection between the position and interpretation of a modifier.

Keywords: relative clauses, restriction, appositives, redundancy, Zapotec, Oto-Manguean

1 Introduction

Relative clauses have long been known to be heterogenous, both structurally and interpretatively. One particularly important empirical division within this domain distinguishes **restrictive** relative clauses from **appositive** relative clauses. While restrictive relative clauses contribute information essential to determin-

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ing the reference of a description, appositive relative clauses provide extra information about an independently identifiable referent. This interpretive contrast correlates with a number of syntactic properties, including what the head of a relative clause can be (proper name, definite description, quantified expression), which relative pronoun is allowed inside the relative clause, their ordering with respect to other modifiers as well as the head, and whether they permit stacking (Partee 1975; Jackendoff 1977; Bianchi 1999; Potts 2005; and others).

These differences have, in turn, suggested that restrictive and appositive relative clauses have distinct hierarchical arrangements, responsible for their interpretive differences. A widely adopted hypothesis in this vein, first advanced by Partee (1975) and extended by others, identifies the two relative clause types with distinct syntactic positions within the DP. Appositive relative clauses combine with the DP itself, and thus are located too high to contribute to determining its reference. Restrictive relative clauses instead attach lower, somewhere within the complement of D, further restricting reference by adding to the DP's descriptive content.

In this paper, we consider how tight the mapping between the syntax and semantics of relative clauses is, in light of data from Santiago Laxopa Zapotec (SLZ).[1] The language has two relative clause structures, with the difference between them easy to diagnose at first impression. **Bare relative clauses** (BRCs) are restrictive (1a), while **complex relative clauses** (CRCs), which contain an additional "classifier" element, are appositive (1b).

(1) a. **Bare relative clause (BRC)**
Jano [beku'=nh shtahs ___ nha'] blull=e'nh.
chase.COMP dog=DEF sleep.CONT there frog=DEF
'The dog who is sleeping there chased the frog.' (RD, SLZ5088)

b. **Complex relative clause (CRC)**
Jano [beku'=nh bi'anh shtahs ___ nha'] blull=e'nh.
chase.COMP dog=DEF CL.AN.DEF sleep.CONT there frog=DEF
'The dog, who is sleeping there, chased the frog.' (RD, SLZ5088)

As restrictive relative clauses, BRCs should be unable to modify proper names. This is indeed the case, as shown in (2a), a restriction we refer to as ***Name + BRC** in what follows. CRCs, by contrast, can modify a proper name (2b).

1 This Zapotec variety is spoken by about 1,200 people in the municipality of Santiago Laxopa, in Oaxaca's Sierra Norte region, as well as in diasporic communities in California. Data here comes from weekly elicitations in person and by Zoom with two speakers living in Santa Cruz. SLZ belongs to a group of Zapotec varieties which are classified as 'southeastern Sierra Zapotec' by the *Catálogo de las lenguas indígenas nacionales* (Instituto Nacional de Lenguas Indigenas 2008). We write SLZ using the community orthography, sometimes with additional diacritics to mark important tonal contrasts (e.g. *é* marks a high tone, while *è* marks a low tone).

(2) a. #Bxixe' [Bedw='nh nhgu'u kachuche'=nh].
sneeze.COMP Pedro=DEF wear.STAT hat=DEF
Intended: 'Pedro who is wearing a hat sneezed.'
b. Bxixe' [Bedw='nh bi'nh nhgu'u kachuche'=nh].
sneeze.COMP Pedro=DEF CL.HU.DEF wear.STAT hat=DEF
'Pedro, who is wearing a hat, sneezed.' (FSR, SLZ5079)

However, BRCs are also incompatible with demonstrative descriptions (3a). This is surprising since they can, of course, modify definite descriptions (1a). If BRCs are able to contribute additional descriptive content in the latter, they should similarly be able to do so in the former. In what follows, we refer to this restriction as ***DEM + BRC**.

(3) a. #[Beku' ki='nh setahs] eso'o yetgu='nh.
dog these=DEF sleep.CONT.PL eat.POT.PL tamale=DEF
Intended: 'These dogs that are sleeping will eat the tamales.'
(FSR, SLZ5085)
b. Esu'unh [bene' xyag ki='nh be'nh dzesekwell
do.POT.PL person male these=DEF CL.EL.DEF play.CONT.PL
trompeta='nh] yu'u=nh.
trumpet=DEF house=DEF
'These men, who play trumpet, will build a house.' (FSR, SLZ5088)

Importantly, the modification of demonstrative descriptions is not ruled out in general, as CRCs are perfectly compatible with them (3b).

We will argue that BRCs are restrictive relative clauses, though we do not attribute the *Name + BRC restriction to their syntax. As we argue in Section 2, these restrictive relative clauses' incompatibility with proper names arises from a constraint on semantic redundancy. When a relative clause provides no additional information beyond what is already provided by the DP description, it is infelicitous (Bach 1974; Fabricius-Hansen 2012; cf. Schlenker 2005, 2021; Ingason 2016).

In Section 3, we show that, with a particular analysis of demonstratives, this redundancy constraint can also be identified as the source of the *DEM + BRC restriction. Based on a comparison with English and Hebrew, we argue that demonstratives are adjectival in SLZ, not determiners (Ds). As adjectives, they form part of the descriptive core of a DP, which is subject to the redundancy constraint on restrictive modification. And, as demonstratives, they establish "pragmatic uniqueness" (Löbner 1985), which always renders restrictive relative clauses redundant.

We turn, in Section 4, to CRCs, which do not exhibit either of these restrictions. Instead, they can function as appositives, something that is only possible if they are not subject to a redundancy constraint as BRCs are. We do not advance

a full account of why this might be, though we do show that CRCs have a different structure than BRCs. While a BRC is integrated into its host DP, a CRC is contained inside its own DP, which stands in some looser syntactic relation to the nominal it modifies.

This syntactic analysis raises a puzzle about CRCs, which we lay out in Section 5. While CRCs can clearly modify non-restrictively, they also pass the interpretive diagnostics for restrictive modification. We identify a parallel between CRCs in SLZ and *one*-appositives in English, which show a similar profile of restrictive modification despite superficial appositive syntax (Wang et al. 2005; Nouwen 2014; Anderbois et al. 2015; Koev 2018).

2 Restrictive modification with BRCs

We begin by establishing that BRCs are restrictive relative clauses.[2] While a restrictive relative clause adds descriptive content to its **host**, typically narrowing its reference or quantificational domain, appositive (non-restrictive) relative clauses: (i) leave the denotation of their host to stand alone, (ii) require a host that establishes reference (e.g., names, definite or demonstrative descriptions, some quantifiers in some contexts), and (iii) introduce a property which holds of all individuals in the denotation of their host. These interpretive properties furnish a number of diagnostics, which we will use to establish that BRCs can modify restrictively. Since we have already seen that BRCs cannot modify proper names, this suggests that they can **only** function as restrictive relative clauses. We derive their incompatibility with proper names from a redundancy constraint, which prohibits a restrictive relative clause when it does not contribute any additional information beyond what is already found in a DP's **descriptive core** (the other descriptive content in the DP) (Bach 1974: 271-272; Fabricius-Hansen 2012).

2.1 Diagnosing restrictive modification

To start, when a definite description fails to be contextually unique, only a relative clause which is restrictive can successfully alter its denotation and satisfy uniqueness. In a context where there are multiple children, the use of *the child* is infelicitous, as no unique referent can be determined (4a). A restrictive relative clause can repair this infelicity (4b), but an appositive relative clause cannot (4c).

(4) **Context:** You and your friend are in a room with the people below:

2 We do not address here the syntactic derivation of BRCs. They pass movement diagnostics, certainly, but it is unknown whether they have a raising or matching structure (Bhatt 2002; Hulsey and Sauerland 2006). Kalivoda and Zyman (2015) argue that relative clauses in a Central Zapotec language only have a matching derivation, but we have not been able to replicate their results for SLZ.

You hear someone sneeze, and you are trying to figure out who did it. So you advance the following hypothesis:

a. #The child sneezed.
b. The child who is wearing the hat sneezed.
c. #The child, who is wearing the hat, sneezed.

In the same context, a BRC can also license the use of a definite description (5b), which is otherwise infelicitous (5a).

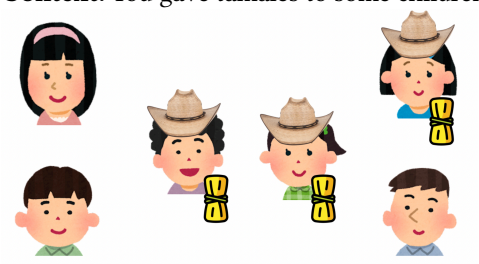
(5) **Context:** As in (4).

a. #Bxixe' bi'i xkwide' =nh.
sneeze.COMP CL.HU young =DEF
'The child sneezed.'

b. Bxixe' bi'i xkwide'=nh [nhgu'u kachuch=e'nh].
sneeze.COMP CL.HU young=DEF wear hat=DEF
'The child who is wearing the hat sneezed.' (FSR, SLZ6078)

Similarly, if the host is a universal quantifier, only restrictive modification can narrow its domain. In a context like (6), where only a subset of the children are both wearing a hat and have a tamale, an appositive relative clause fails to restrict universal quantification to just those children wearing a hat, leading to falsity (6a). A restrictive relative clause is, by contrast, judged true in this context (6b).

(6) **Context:** You gave tamales to some children, resulting in this scene:



a. I gave all the children who are wearing hats a tamale.
b. #I gave all the children, who are wearing hats, a tamale.

A BRC is also judged to be true in this context (7), suggesting that it can compose restrictively with the universal quantifier.

(7) **Context:** As in (6).

Yuge' bi'i xkwide'=nh [nhgu'u lhape'] bnhelljw=a' tu yetgu'.
all CL.HU young=DEF wear.STAT hat gave.COMP=1SG one tamale
'I gave all the children who are wearing hats a tamale.' (FSR, SLZ5080)

Finally, a restrictive relative clause can modify a negative indefinite (8a), while an appositive cannot (8b), since the negative indefinite does not establish reference.

(8) **Context:** I have children, but none that eat tamales.

a. I don't have (any) children who eat tamales.
b. #I don't have (any) children, who eat tamales.

BRCs can felicitously modify a bare nominal in the scope of negation (9), again patterning with restrictive relative clauses.

(9) **Context:** I have children, but none that eat tamales.

Bitu de bi'i xkwide' tsi=a' [dzo yetgu'].
NEG EXIST CL.HU young of=1SG eat.CONT tamale
'I don't have (any) children who eat tamales.' (FSR, SLZ5083)

We conclude based on these diagnostics that BRCs can serve as restrictive relative clauses, narrowing their host's reference or quantificational domain.

2.2 Deriving *Name + BRC

BRCs, moreover, can **only** modify restrictively. Like restrictive relative clauses in English, BRCs cannot have a proper name as a host, a restriction we called the *Name + BRC generalization.

(10) #Pierre Omidyar {who, that} studied at Berkeley is a billionaire.

(11) #Bxixe' Bedw='nh [nhgu'u kachuche'=nh].
sneeze.COMP Pedro=DEF wear.STAT hat=DEF
Intended: 'Pedro who is wearing a hat sneezed.' (FSR, SLZ5079)

A syntactic explanation for *Name + BRC is unlikely. While proper names in English might lack the internal structure necessary to host modification, they are internally complex in SLZ. Proper names always bear the definite clitic *=nh* in argument position (12).

(12) Ba nhake Maziar=e'nh bene' xuanh.
already be.STAT Maziar=DEF CL.EL elder
'Maziar is an elder.' (FSR, SLZ068)

If proper names in SLZ essentially have the structure of a definite description, it

is unlikely the unacceptability of (11) can be attributed to their not having the requisite structure to host a BRC in a position that would be sufficiently low for restrictive modification.

Instead, we adopt a semantic explanation for *Name +BRC. We take it to arise for the same reason that restrictive relative clauses cannot modify a definite description like *the founder of eBay*, whose domain contains a unique individual (in this case, Pierre Omidyar).

(13) #The founder of eBay {who, that} studied at Berkeley is a billionaire.

There is an old idea that this infelicity arises due to a constraint on redundancy. For the restrictive relative clause to contribute non-trivial information, its host's descriptive core must contain, in any given context, at least one individual who does **not** satisfy the relative clause description (Bach 1974: 271; Fabricius-Hansen 2012 *apud* Cabredo Hofherr 2013; Wiltschko 2013).

(14) **No Redundant Restriction:**
For a DP with a descriptive core δ (i.e., the N and any adjectival modifiers) modified by a restrictive relative clause ρ, i.e.,

$[_{DP} \ldots [_{\delta} \ldots \mathrm{N} \ldots] \ldots [_{\rho} \ldots] \ldots]$

δ must, in context, denote a set such that $[\![\delta]\!] \cap [\![\neg\rho]\!] \neq \emptyset$.

This accounts for the infelicity of (13), as there is only one founder of eBay (who either studied at Berkeley or did not). And, it derives *Name + BRC for the same reason: in many contexts, a proper name picks out a unique individual, and No Redundant Restriction as a result can never be satisfied. This predicts that when a proper name does **not** refer uniquely, it can be modified by a BRC, which is in fact possible (15).

(15) **Context:** There are several people named Pedro, only one of whom is wearing a hat.

Bxixe' Bedw='nh [nhgu'u kachuche'=nh].
sneeze.COMP Pedro=DEF wear.STAT hat=DEF
'The Pedro who is wearing a hat sneezed.' (RD, SLZ5082)

In this context, where there are multiple individuals answering to the same name, No Redundant Restriction can be satisfied, and so the BRC is felicitous.

As stated above, No Redundant Restriction says nothing about how its requirement is imposed. Is it a semantic presupposition, a pragmatic presupposition, or something else? Is it associated with the restrictive relative clause itself, with restrictive modifiers in general, or is it somewhat an independent property of nominal structure? At issue here is what counts as part of the "descriptive core" for the purpose of evaluating the restrictive relative clause's redundancy.

Intuitively, this is all of the DP's descriptive content, minus the relative clause itself. While we welcome a general theory of redundancy, if one is possible (see Ingason 2016 and Schlenker 2021 for some recent efforts), we have stated No Redundant Restriction in more construction-specific terms in order to make our commitments clear.

In particular, in addition to the head noun, restrictive adjectives must count as part of a DP's descriptive core for the purposes of satisfying No Redundant Restriction. Evidence for this comes from languages which have more than one definite determiner. In standard and non-standard German varieties which distinguish "weak" and "strong" definite determiners, the weak determiner appears in DPs that refer to a situationally unique individual. The weak determiner, moreover, cannot occur with a restrictive relative clause, as shown in (16) for Austro-Bavarian, though it is compatible with a restrictive adjective (Wiltschko 2013 and the reference cited there).

(16) a. *'s Bauch des (was) da Chomsky gschriem hot
the$_w$ book that which the$_w$ Chomsky wrote has
Intended: 'the book that Chomsky wrote'

b. 'n stärksten Mann von Los Feliz
the$_w$ strongest man from Los Feliz
'the strongest man from Los Feliz'

(Brugger and Prinzhorn 1996: 14-15)

The incompatibility of weak definite determiners with restrictive relative clauses receives a natural explanation in terms of some version of No Redundant Restriction (Fabricius-Hansen 2012 *apud* Cabredo Hofherr 2013; see also Wiltschko 2013, though she ultimately argues for a structural analysis). If weak definites require the descriptive core to denote a singleton set in context, then a restrictive relative clause will be impossible. By contrast, restrictive adjectives are possible because they constitute part of the DP's core and help to establish situational uniqueness.

Before moving on, a final caveat about No Redundant Restriction. It is stated as a local constraint, but its global consequences are hard to ignore. A DP containing a restrictive relative clause will always make a more informative contribution than if the relative clause were absent. This suggests an account of restrictive relative clauses' infelicity with proper names and uniquely-referring definite descriptions tied to Gricean pressures to minimize linguistic form or content. Indeed, Schlenker (2005) proposes a pragmatic constraint, Minimize Restrictors!, that does just this for restrictive modifiers.

(17) **Minimize Restrictors!** (after Schlenker 2005: 391):
A definite description containing a restrictive modifier *A* is deviant if *A* is redundant; that is, if:

(i) *A* can be dropped from the definite description without changing its denotation, and
(ii) *A* does not serve any other pragmatic purpose.

Minimize Restrictors! rules out definite descriptions in which a restrictive relative clause does not serve to narrow down the denotation of the host's core, just as No Redundant Restriction does.

While we acknowledge this connection, we adopt a grammatical principle, like No Redundant Restriction, for two reasons. First, we are interested here in how restrictive relative clauses modify not only definite descriptions, but also demonstrative descriptions. Minimize Restrictors!, however, is only relevant for definite descriptions, whose reference is determined entirely by their descriptive content; demonstrative descriptions, which are commonly assumed to establish reference through other means (e.g., a deictic or cognitive gesture), would not be subject to the pragmatic pressures of minimization in the same way. Second, No Redundant Restriction creates an interpretive asymmetry between restrictive modifiers, while Minimize Restrictors does not. It is the relative clause that must not be redundant relative to the information conveyed by the noun and other restrictive modifiers. This distinction is crucial for our account of the other restriction on BRCs, which involves demonstratives, to which we turn next.

3 The demonstrative puzzle

BRCs are incompatible not just with proper names, but also with demonstrative descriptions. This generalization, which we called *DEM + BRC, is illustrated again below.

(18) *[Beku' ki='nh setahs] eso'o yetgu'=nh.
dog these=DEF sleep.CONT.PL eat.POT.PL- tamale=DEF
Intended: 'These dogs that are sleeping will eat the tamales.'
(FSR, SLZ5085)

The incompatibility is surprising for at least two reasons. First, BRCs are acceptable in definite descriptions, and demonstrative marking is often of a subtype with definite marking. For example, English demonstrative descriptions can be restrictively modified by a relative clause.

(19) Those books that you left on the stoop were my favorite.

In addition, in some languages with a definiteness split, a strong definite determiner is required with restrictive relative clauses, and this strong determiner can have the form and meaning of a demonstrative (Sichel in press).

We will argue that SLZ diverges from these patterns because its demonstratives are adjectival. This argument will be based on a close examination of the

language's nominal structure, in comparison with Hebrew. And this, in turn, will provide an explanation for *DEM + BRC. As adjectives, demonstratives in SLZ form part of the DP's descriptive core, and thus factor into the calculation for whether No Redundant Restriction is satisfied or not.

3.1 Nominal demonstratives are adjectival in SLZ

There are six demonstratives in SLZ, given in Table 1, which encode at least a two-way proximity distinction and singular vs. plural number. What differentiates the two pairs of proximate demonstratives (e.g., *nhi*/*ki* vs. *nhga*/*kinhga*) is, at this point, unknown.

	SG	**PL**
proximate	*nhi*	*ki*
	nhga	*kinhga*
distal	*nha'*	*ka'*

Table 1 Demonstratives in Santiago Laxopa Zapotec.

All three singular demonstratives can also be used as locatival adverbs: *nhi* or *nhga* 'here' (20a) and *nha'* 'there' (20b).

(20) a. Nhi ze Maria='nh.
here stand.STAT Maria=DEF
'Here is Maria.' (FSR, SLZ020)

b. Ne'e dzi'i=ba' nha'.
still sit.CONT=3HU there
'S/he is still sitting there.' (FSR, SLZ5049)

Such formal overlap between adverbs and adjectives is found in many languages. Its presence for demonstratives in SLZ is perhaps a first indication that they are not determiners (Ds). There is further evidence that they are instead adjectival, based on demonstratives' linear position within the DP.

SLZ has no independent definite determiner. It has a definite enclitic, which appears after a possessor or any adjectival modifiers (21). Numerals only appear before the noun (21b).

(21) a. beku' gulhe=nh
dog old=DEF
'the old dog'

b. dzupe beku' gache' xhenh tsi=a'=nh
two.COLL dog yellow large of=1SG=DEF
'my two large yellow dogs' (FSR, SLZ6079)

When no nominal modifiers are present, demonstratives immediately follow the noun and can host the definite enclitic, which is optional.

(22) Se'eyitj gunhla'=nh lhenh bi'i nhu'ulhe ka'.
play.CONT.PL goblin=DEF with CL.HU female those
'The goblins played pranks on those girls.' (FSR, SLZ014-8)

(23) Setahs beku' ka'(=nh).
sleep.CONT.PL dog those=DEF
'Those dogs are sleeping.' (FSR, SLZ5085)

"Low" adjectives describing place of origin, color, and shape all reliably precede "high" adjectives, such as *la'ay* 'expensive', *xhi'a* 'mean', or *xhudzi'* 'beautiful', which express more evaluative properties. Adjectives from both classes always precede a demonstrative.

(24) a. xha ga'a la'ay ka'
clothes green expensive those
'those expensive green clothes'
b. beku' Xhgulle' xhi'a ka'
dog Zoogocho mean those
'those mean dogs from Zoogocho'
c. beku' blhul xhudzi' ka'
dog round beautiful those
'those beautiful round dogs' (FSR, SLZ6078)

This linear order, which is depicted schematically in (25), inverts the cross-linguistically common ordering of evaluative adjectives before adjectives describing more objective properties (Sproat and Shih 1988).

(25) (Num) N (Low As) (High As) (Dem) (D)

Following Cinque (1994, 2010), however, we take evaluative adjectives universally to be located higher up in the nominal spine than other adjectives. In other words, the underlying structural configuration for DPs in SLZ, as in all languages, is what is shown in (26).

(26) D > Num > High As > Low Adjs > N

The mirror image ordering for adjectives is not rare cross-linguistically, and it can be understood if elements to the right are structurally higher in the nominal spine than elements that linearly precede them.

One way of deriving this configuration is through "roll-up" movement, as Sichel (2002) and Shlonsky (2004) propose for Hebrew and Arabic varieties. The derivation for (24a), under this view, would be the following:

(27) [[[$_{N}$ xha] [$_{A}$ ga'a]] [$_{A}$ la'ay]] ka']

The noun and its closest modifier together move to the specifier of the next highest modifier. The constituent containing these elements then undergoes another instance of phrasal movement, an operation that is iterated until, after the final step, the highest modifier's specifier hosts the noun and all its other modifiers.

We take the fact that demonstratives occur at the right edge of the DP to indicate that demonstratives are adjectives in SLZ, and in fact the highest adjectives in the nominal projection. If they were Ds, merged above Num, then we would expect either for them to appear to the left of Num, or for Num to occur in penultimate position with demonstratives following them (a full inversion of the nominal spine). But if instead demonstratives are the highest adjectives, merging below Num and above all other adjectives, their final position within the DP is expected. In derivational terms, demonstratives host a nominal constituent in their specifier, just like other adjectives.[3] The iterated phrasal movement that inverts low adjectives over high adjectives, then, also results in the inversion of all other adjectives over demonstratives, as illustrated in (27) above.

This account finds support in a comparison with Hebrew, which has the same mirror image ordering of adjectives and demonstratives.

(28) ha-mexonit ha-amerika'it ha-nehederet ha-zot
DEF-car DEF-American DEF-wonderful DEF-this
'this wonderful American car'

Unlike in SLZ, however, the adjectival status of demonstratives in Hebrew is morphologically transparent. Just like any other adjective, they exhibit definiteness concord, in addition to gender and number concord.

3.2 Deriving *DEM + BRC

With this in place, we now turn to the relationship between demonstratives and restrictive relative clauses. BRCs invariably follow all non-demonstrative adjectives and, thus, are located higher than them (29).[4]

(29) beku' Xhgulle' xhi'a=nh [shtas=dzgwa]
dog Zoogocho mean=DEF sleep.CONT=INT
'the mean dog from Zoogocho that sleeps a lot'

3 The alternative, that demonstratives are Ds, would require a D also to be able to host a nominal constituent in its specifier, on a par with adjectives but distinct from numerals. This is possible, though it would require an explanation for why it is not only adjectives that allow movement of their complement into their specifier.

4 The definite enclitic generally appears in phrase final position, after non-clausal modifiers, e.g. adjectives and possessors. With BRCs, however, the definite determiner occurs preceding the relative clause, as in (29). We take this to reflect relinearization of the definite enclitic, most likely for phonological or prosodic reasons.

When illustrating *DEM + BRC up until this point, the demonstrative has always preceded the relative clause, e.g., (18). However, it is not possible to tell, on general grounds, whether the demonstrative ought to precede or follow a BRC (see footnote 4). The incompatibility with a restrictive relative clause holds for both possible orders.

(30) a. *Beku' ki=('nh) [setahs] eso'o yetgu='nh.
dog these=DEF sleep.CONT.PL eat.POT.PL tamale=DEF
Intended: 'These dogs that are sleeping will eat the tamales.'
b. *Beku'=nh [setahs] ki=('nh) eso'o yetgu='nh.
dog=DEF sleep.CONT.PL these=DEF eat.POT.PL tamale=DEF
(FSR, SLZ5085)

If BRCs are located higher than all adjectives (Cinque 2010), then the impossibility of (30a) and (30b) can be traced to a redundancy constraint like No Redundant Restriction. Even if they are relatively high adjectives, demonstratives still attach below a relative clause. Thus, depending on what their semantic contribution was, they could induce redundancy.

In the literature, demonstrative determiners have been associated with "pragmatic uniqueness" (Löbner 1985, 2011). Following Wolter (2006) we assume that demonstratives introduce, or mark, supplemental information that, when combined with the material in their prejacent, generates a property that holds for a unique entity.[5] In languages in which this has been systematically studied, the source of this supplemental information is heterogeneous, including contextual information such as deixis or anaphora, and also content introduced higher in the nominal spine than the noun and its immediate modifiers. These higher modifiers, which count as supplementary information in the relevant sense, include restrictive relative clauses. Note, for example, how the English demonstrative *those*, with or without additional content provided by the head noun, is not interpreted deictically or anaphorically when associated with a restrictive relative clause (31). It simply means 'the ones', consistent with the idea that the demonstrative marks that uniqueness requires further indications beyond the lexical content provided by the noun, including relative clause modification.

(31) a. Those that you left on the stoop were my favorite.
b. Those books that you left on the stoop were my favorite.

A complex nominal that includes demonstrative marking, then, is guaranteed to establish unique reference. If the noun composes directly with the demonstrative, uniqueness will be established contextually, via deixis or anaphora. If the noun

5 More work is needed to determine exactly what kinds of contextual information SLZ demonstratives can introduce. Minimally, we are certain they may function deictically, but anaphoric uses may also be possible.

composes first with a restrictive relative clause and then a demonstrative, the demonstrative description is neither deictic nor anaphoric, but simply marks the addition of relative clause content to satisfy uniqueness. Importantly, in this case, No Redundant Restriction is satisfied because the descriptive core is not singleton denoting, and so the relative clause can make an informative contribution.

However, in SLZ, demonstratives are adjectival and, as we have argued, compose as part of a nominal's core. If they impose pragmatic uniqueness via a contextual route, such as deixis, then the addition of a restrictive relative clause will invariably violate No Redundant Restriction. More generally, we predict the same for all and only languages with adjectival demonstratives (or demonstratives which are merged low for any other reason). In Germanic and Romance, demonstratives (and other uniqueness-marking material) can co-occur with restrictive relative clauses because, as Ds, the syntax affords them a higher position. Hebrew, on the other hand, has adjectival demonstratives: these only have a deictic interpretation when modified by a relative clause, which, as a result, can only receive a non-restrictive reading.

(32) ha-sfarim ha-hem Se-heS'art ba-xuc hayu me'od yekarim
DEF-books DEF-those that-you.left at.the-outside were very expensive
'Those books, that you left outside, were very expensive.'

In sum, *DEM + BRC is also a product of No Redundant Restriction, like *Name + BRC. Once an adjectival demonstrative composes with the noun, unique reference is guaranteed and no further restriction by a restrictive relative clause is possible.

4 The difference with CRCs

Our account attributes both *Name + BRC and *DEM + BRC to a redundancy constraint on restrictive relative clauses. Why are CRCs not subject to this restriction on modification? Recall that CRCs can modify a uniquely-referring proper name (33a) or a demonstrative description (33b).

(33) a. Bxixe' [Bedw='nh bi'nh nhgu'u kachuche'=nh].
sneeze.COMP Pedro=DEF CL.HU.DEF wear.STAT hat=DEF
'Pedro, who is wearing a hat, sneezed.' (FSR, SLZ5079)

b. Esu'unh [bene' xyag ki='nh be'nh dzesekwell
do.POT.PL person male these=DEF CL.EL.DEF play.CONT.PL
trompeta='nh] yu'u=nh.
trumpet=DEF house=DEF
'These men, who play trumpet, will build a house.' (FSR, SLZ5088)

This non-restrictive modification is only possible if CRCs are free from No Re-

dundant Restriction.

While we do not have a complete answer for why this is, we will identify a structural difference between BRCs and CRCs. The former are structurally integrated into their host DP, in a way that subjects them to No Redundant Restriction. By contrast, CRCs are contained inside their own DP, which is external to the DP containing their host nominal.

(34) a. **Structure of BRCs**
[$_{DP}$ … N(=DEF) … [$_{RC}$ …]]
b. **Structure of CRCs**
[$_{DP}$ … N(=DEF) …] … [$_{DP}$ … CL(=DEF) … [$_{RC}$ …]]

This structural difference is motivated by the key surface difference between the two types of relative clauses: the presence of a nominal element between the relative clause and host noun in CRCs. We will argue that this element is a **nominal classifier**, which in turn suggests that the relative clause inside a CRC occurs inside its own DP.

4.1 Nominal classifiers in SLZ

Unlike the numeral classifiers found in Mandarin Chinese and many other languages, nominal classifiers do not occur obligatorily with a numeral. They contribute an animacy restriction to descriptions headed by an adjective—(35a), (35c)—or noun—(35b), (35d).

(35) a. bene' gulhe nha'
CL.EL old that
'that elder'
b. (bi'i) bilh=a'
CL.HU sister=1SG
'my sister'
c. tu bi'a wak
one CL.AN adult
'an adult animal'
d. de'e gunlha'=nh
CL.IN goblin=DEF
'the goblin'

Not all nouns can occur with a classifier, and for some of the nouns that can, the classifier is optional (35b). When there is no nominal head (35a), the classifier is obligatory. The classifiers encode a four-way animacy distinction, as shown in Table 1. This only partially tracks the animacy system represented in the language's pronoun system (Foley and Toosarvandani 2022). In particular, not all nominals with *bene'* or *bi'i* necessarily describe an elder or non-elder human (respectively). For instance, in (36), the object in the first clause is first referred to using the non-elder human pronoun *leba'*, and then described using the "elder" classifier *bene'*.

(36) Nhunhbi'a Maria='nh leba' nha' nha=ba' bene' wenh=a'.
know.STAT Maria=DEF 3HU and call.STAT=3HU CL.EL good=DEF

'Maria knows him and calls him a good person.' (FSR, SLZ022-029)

We will continue to refer to the "elder" human classifier as such, though this mismatch merits further investigation.

Category	Citation	Definite
Elder human (EL)	*bene'*	*bé'nh*
Non-elder human (HU)	*bi'i*	*bi'nh*
Animal (AN)	*bi'a ~ bè*[6]	*bi'anh ~ bè'nh*
Inanimate (IN)	*de'e*	*de'nh*

Table 2 Nominal classifiers in Santiago Laxopa Zapotec, with citation and definite forms.

The classifiers can also occur without any other descriptive material, in an indefinite (37a), definite (37b), or demonstrative (37c).

(37) a. **Context:** A man and his friend are herding mule.
Ganhiz=e' tu bè tse=e'.
grab.COMP=3EL one CL.AN of=3EL
'He grabbed one animal for himself.' (IVJ, SLZ2004-t1-27)

b. Betw Pablo='nh beku' tse be='nh.
hit.COMP Pablo=DEF dog of CL.EL=DEF
'Pablo hit the person's dog.' (FSR, SLZ1073-1)

c. Betw Pablo='nh beku' tse be nha'.
hit.COMP Pablo=DEF dog of CL.EL that
'Pablo hit that person's dog.' (FSR, SLZ1014-11)

When the elder classifier occurs with the definite determiner *=nh* or the demonstratives *nha'* 'that' or *nhi* 'this', it takes a reduced form, shown in Table 2. At first glance, the classifiers appear to be a type of "light noun" which contributes an animacy restriction to a description, further restricting its reference.[7] What is important for us here is simply that classifiers are nominal elements which occur inside a DP whether there is additional lexical material or not. Some preliminary evidence in favor of viewing the classifier as a functional, rather than lexical, nominal element comes from their contextual flexibility when they are not accompanied by further content provided by a noun or adjective. In such situations, its reference can be restricted by context. In (38), the classifier DP *de'e ka* is restricted to picking out avocados.

7 Royer (2019, to appear) argues that nominal classifiers in Chuj (a Mayan language) are weak definite determiners, which require the referent to be the unique individual satisfying the description. This analysis cannot be extended to SLZ, as its classifiers can appear in indefinite DPs.

(38) Nhku=a' yixu ki='nh lhu mes=e'nh, nha' de'e ka
lay.COMP=1SG avocado these=DEF on table=DEF and CL.IN those
ll=a'=nh lu yesw='nh.
put.CONT=1SG=3IN in pot=DEF
'I laid these avocados on the table, and I'm putting those ones in the pot.'
(RD, SLZ5088)

We can understand the compatibility of classifiers with anaphora if, like other pronouns, they are represented as functional heads or specifiers.

4.2 The appositive structure of CRCs

CRCs are distinguished from BRCs by the presence of a nominal element between the relative clause and its host. There are several reasons to think that this element is one of the nominal classifiers. First, it matches the definite form of the classifiers exactly. Second, when a CRC appears in the pivot of an existential, where definite marking is prohibited in SLZ, this element appears in the citation form for a classifier, without a definite determiner.

(39) Bitu' de [bi'i xkwide' tsi=a' bi'i/*bi'nh dzo yetgu'].
NEG EXIST CL.HU small of=1SG CL.HU/CL.HU.DEF eat.CONT tamale
'I don't have a child who eats tamales.' (FSR, SLZ5083)

Finally, this element can itself host adjectival modification, as in (40), with the adjective appearing between the classifier (in its citation form) and the definite determiner.

(40) [Beku'=nh bi'a blhul=e'nh shtahs] blag blull=e'nh.
dog=DEF CL.AN round=DEF sleep.CONT chase.COMP frog=DEF
'The dog, the round one that's sleeping, chased the frog.'
(FSR, SLZ5085)

But if CRCs contain a classifier, what is the relationship between the classifier and the relative clause, on the one hand? And, on the other hand, what is the relative clause's relationship to the host of the CRC, that is, *beku'nh* 'the dog' in (40)?

Starting with the first question, it seems reasonable to assume that the classifier itself serves as the host for a BRC. In other words, in CRCs, the classifier and relative clause form a DP to the exclusion of the host nominal. An argument for this structure comes from definite determiners and demonstratives. To start, the classifier can come with its own definite enclitic, as in (40), which should only be possible if it forms a DP on its own.[8] In addition, the classifier in a CRC

8 We assume that the definite enclitic only occurs once per DP. Importantly, its position on the classifier

cannot be modified by a demonstrative, as shown in (41), though a classifier is otherwise possible in demonstrative descriptions (see (33b) above).

(41) *Esu'unh bene' xyag=e'nh [bene' ki='nh dzesekwell
make.POT.PL CL.EL male=DEF CL.EL these=DEF play.CONT.PL
trompeta='nh] yu'u=nh.
trumpet=DEF house=DEF
Intended: 'The men, these ones who play trumpet, will make a house.'
(RD, SLZ5088)

This is the *DEM + BRC restriction, which we analyzed in Section 3 in terms of how demonstratives attach below the relative clause. The fact that the same restriction holds for the classifier suggests strongly that it is the head of its own BRC.

The second question above is more difficult. It suffices for now just to say that the BRC headed by the classifier inside CRCs is external to its host, and in this sense, we can take it to be an appositive. For appositives in English and other languages, many syntactic analyses have been advanced, which make the appositive and its host a constituent through coordination, complementation, or adjunction; which treat the appositive as "orphaned" from the host through extraposition, discontinuous or constituency; or, which posit underlying constituency that is separated in the course of the derivation (see de Vries 2006 for a comprehensive survey of these approaches).

Whatever the structure of CRCs is, there is also the question of how this structure is mapped onto their interpretation. We have seen that a non-restrictive interpretation is possible, with both proper names and demonstrative descriptions. This requires that CRCs be free from No Redundant Restriction, though we have not formulated the specific sense in which this holds.

5 Restrictive readings for CRCs

Above, we have provided interpretive evidence that leads to the conclusion that BRCs are restrictive relative clauses, and we have shown how we might derive two generalizations about their distribution via a redundancy constraint, No Redundant Restriction. We have also examined how the apparent internal structure of CRCs and their distributional differences with BRCs suggest that CRCs are nominal appositives which compose non-restrictively. However, this cannot quite be the entire story. While BRCs must compose restrictively, it is actually not the case that CRCs are always interpreted non-restrictively. In fact, they pass all the same diagnostics for restrictive modification as BRCs. First, CRCs can li-

or its adjectival modifier, as in (40), is completely expected if it is in fact the head of a BRC, as we hypothesize.

cense definite descriptions which would otherwise fail to be contextually unique (42). And, they can restrict the domain of a universal quantifier (43), as well as modify a negative indefinite (44).

(42) **Context:** You and your friend are in a room with the people below.

Bxixe' bi'i xkwide'=nh [bi'=nh nhgu'u kachuche'=nh].
sneeze.COMP CL.HU child=DEF CL.HU=DEF wear.STAT hat=DEF
'The child, the one who is wearing the hat, sneezed.' (FSR, SLZ5079)

(43) **Context:** You gave tamales to some children, resulting in this scene.

Yuge' bi'i xkwide'=nh [bi'=nh nhgu'u lhape'] bnhelljw=a'
all CL.HU child=DEF CL.HU=DEF wear.STAT hat give.COMP=1SG
tu yetgu'.
a tamale
'I gave all the children, the ones who are wearing hats, a tamale.'
(FSR, SLZ5080)

(44) **Context:** I have children, but none that eat tamales.

Bitu' de bi'i xkwide' tsi=a' [bi'i dzo yetgu].
NEG EXIST CL.HU child of=1SG CL.HU eat.CONT tamale
'I don't have any children who eat tamales.' (FSR, SLZ5083)

Following a suggestion by Morzycki (2008) for prenominal adjectives, we might consider whether there are actually two derivations for CRCs, though their results are string identical at the surface. One results in the appositive structure we have been considering, which has a non-restrictive interpretation. The other would be a restrictive derivation, in which the CRC composes around the same position as a BRC.

This possibility is not, however, tenable. If the restrictive CRCs in (42)–(44)

share a derivation with BRCs, they should be sensitive to the same constraints, including both *Name + BRC and *DEM + BRC. If correct, this would lead to the prediction that when CRCs modify a demonstrative nominal, only a non-restrictive interpretation should be possible, since, as we have seen above, restrictive readings involving a BRC with a demonstrative are impossible. Surprisingly, this prediction is not borne out: restrictive interpretations for CRCs can arise even with a demonstrative.

(45) **Context:** As in (43).

Yuge' bi'i xkwide' ka'=nh [bi'=nh nhgu'u lhape']
all CL.HU child those=DEF CL.HU=DEF wear.STAT hat
bnhelljw=a' tu yetgu'.
give.COMP=1SG a tamale
'I gave all those children, the ones who are wearing hats, a tamale.'
(FSR, SLZ6061)

Given our claim that demonstratives in SLZ are adjectival, which renders further restrictive modification redundant, we conclude that a derivation for (45) in which the CRC modifies restrictively like a BRC is impossible.

Recall that No Redundant Restriction is defined in terms of DP-internal modification. A simple way to explain the grammaticality of (45) would be to maintain that, despite their apparent restrictive interpretation, CRCs like those in (43) and (45) compose outside of the DP like we have considered for CRCs in general.

How else might a CRC restrict the reference or quantificational domain of its host, if not by composing as a restrictive modifier? We are not the first to observe restrictive readings for appositive content.[9] Wang et al. (2005) briefly describe a subset of English nominal appositives that exhibit restrictive readings (see also Nouwen 2014, Anderbois et al. 2015, and Koev 2018). While they focus on *one*-appositives (46), appositives with more lexical content can show the same readings (47), so long as the appositive entails the description contributed by its host (Schlenker 2021).

(46) a. If a professor, a famous one, publishes a book, he will make a lot of money.
b. John believes that a professor, a quite famous one, published a new book.
c. If no professor, no boring one, comes to the party, it will be good.

(47) a. If a professor, a famous professor, publishes a book, he will make a

9 Besides the class of appositives that figure in the rest of this section, there is also a well-known class of restrictive appositives in English sometimes called "close" appositives (e.g. Burton-Roberts 1975): *my friend John*, *us linguists*, *Mary the baker*, etc. They seem amenable to an analysis as true restrictive modifiers, so we set them aside and focus on the constructions which more closely resemble CRCs.

lot of money.

b. John believes that a professor, a quite famous professor, published a new book.

c. If no professor, no boring professor, comes to the party, it will be good.

As Wang et al. note, these readings are available for only nominal appositives. Appositive relative clauses fail to provide the same interpretations. By contrast to (48), (49) only has the reading that all the professors in the context are linguists.

(48) The dean will be happy if all the professors, the ones in the linguistics department, publish a book next year.

(49) #The dean will be happy if all the professors, who are in the linguistics department, publish a book next year.

Intuitively, *one*-appositives seem to provide a suitable appositive paraphrase at least for the restrictive CRCs in (42)-(43), as shown by their translations.[10]

It would seem, then, that CRCs might have restrictive readings for the same reason that one-appositives in English do. The right theory of this unexpected interpretation pattern is still very much an open question. While some authors (e.g. Nouwen 2014) suggest that restrictively-read one-appositives have the syntax of restrictive modifiers, a possibility we reject for CRCs above, others have considered that their special properties come from an ability to serve as corrections to the semantic content of their host (e.g. Anderbois et al. 2015). This latter analysis may be possible for CRCs, and deserves further investigation.

Whatever their ultimate analysis, CRCs in SLZ add to the growing list of cases which blur a one-to-one mapping between syntactic apposition and non-restrictive interpretation. Above, we have motivated an analysis of the syntactic differences between the two relative clauses of SLZ which is very similar to Partee's 1975 distinction of attachment height. With No Redundant Restriction, the distributional restrictions on BRCs are explained if they compose within the DP, and the contrasting freedom of CRCs is explained if they compose outside of the DP. What we have complicated in this section is the idea that these syntactic positions—in particular the external position of appositives—fully determine the interpretation of a relative clause.

6 Summary

We have shown that SLZ has two relative clause constructions, a BRC (bare relative clause) and a CRC (complex relative clause). The BRC is a restrictive relative clause, whereas the CRC is a nominal appositive which contains a light noun

10 For reasons we do not fully understand, a one-appositive translation for (44), which involves a negative indefinite host, is not obviously good in English: ?*I don't have any children, ones who eat tamales.*

and a restrictive relative clause (i.e., a BRC). These two kinds of relative clauses map onto different structures: BRCs are always DP-internal restrictive modifiers, whereas CRCs are appositive to their hosts.

This distinction derives two generalizations about their distributions, *Name + BRC and *Dem + BRC. Proper names and demonstratives are both associated with unique reference. A redundancy constraint, No Redundant Restriction, dictates that BRCs cannot compose with constituents which already denote a unique entity. But CRCs are not subject to this constraint by virtue of their syntax, allowing them to modify proper names and demonstrative descriptions.

Along the way, we have detected an apparent "restrictive" reading for CRCs, suggesting that the syntax of apposition and non-restrictive modification do not necessarily go hand in hand. This restrictive reading cannot have the same source as the restrictive modification associated with BRCs: CRCs can modify demonstrative descriptions, and thus are not subject to No Redundant Restriction. This points to a new pathway for restrictive modification by relative clauses, though it raises questions for how the mandate expressed by No Redundant Restriction is imposed. Why are only the relative clauses that are more tightly integrated with their host sensitive to it? And, more generally, what mechanisms precisely underlie this restriction? These questions remain open for future study.

References

Anderbois, S., Brasoveanu, A., and Henderson, R. (2015). At-issue proposals and appositive impositions in discourse. *Journal of Semantics*, 32:93–138.

Bach, E. (1974). *Syntactic Theory*. Holt, Rinehart and Winston.

Bhatt, R. (2002). The raising analysis of relative clauses: Evidence from adjectival modification. *Natural Language Semantics*, 10:43–90.

Bianchi, V. (1999). *Consequences of Antisymmetry: Headed relative clauses*. Mouton de Gruyter.

Brugger, G. and Prinzhorn, M. (1996). Some properties of German definite articles. Manuscript, University of Vienna.

Burton-Roberts, N. (1975). Nominal apposition. *Foundations of Language*, 13(3):391–419.

Cabredo Hofherr, P. (2013). Reduced definite articles and restrictive relative clauses. Handout, Forschergruppe Relativsätze, Frankfurt.

Cinque, G. (1994). On the evidence for partial N-movement in the Romance DP. In Cinque, G., Koster, J., Pollock, J.-Y., Rizzi, L., and Zanuttini, R., editors, *Paths towards universal grammar: Studies in honor of Richard S. Kayne*, pages 85–110. Georgetown University Press.

Cinque, G. (2010). *The syntax of adjectives*. MIT Press.

de Vries, M. (2006). The syntax of appositive relativization: On specifying coordination, false free relatives, and promotion. *Linguistic Inquiry*, 37(2):229–270.

Fabricius-Hansen, C. (2012). (Non-)Restrictivity from a discourse perspective. Handout, Semantic and Pragmatic Properties of (Non)Restrictivity, Stuttgart.

Foley, S. and Toosarvandani, M. (2022). Extending the person–case constraint to gender: Agreement, locality, and the syntax of pronouns. *Linguistic Inquiry*, 53(1):1–40.

Hulsey, S. and Sauerland, U. (2006). Sorting out relative clauses. *Natural Language Semantics*, 14(2):111–137.

Ingason, A. K. (2016). Context updates are hierarchical. *Glossa*, 1(1):37.

Instituto Nacional de Lenguas Indigenas (2008). Catálogo de las lenguas indigenas nacionales.

Jackendoff, R. (1977). *X-Bar Syntax: A Study of Phrase Structure*. MIT Press, Cambridge, MA.

Kalivoda, N. and Zyman, E. (2015). On the derivation of relative clauses in Teotitlán del Valle Zapotec. In *Proceedings of BLS 41*, pages 219–243.

Koev, T. (2018). Appositive projection and its exceptions. Manuscript, University of Konstanz.

Löbner, S. (1985). Definites. *Journal of Semantics*, 4:279–326.

Löbner, S. (2011). Concept types and determination. *Journal of Semantics*, 28:279–333.

Morzycki, M. (2008). Nonrestrictive modifiers in non-parenthetical positions. In Kennedy, C. and McNally, L., editors, *Adjectives and adverbs*. Oxford University Press.

Nouwen, R. (2014). A note on the projection of appositives. In McCready, E., Yabushita, K., and Yoshimoto, K., editors, *Formal approaches to semantics and pragmatics*, pages 205–222. Springer.

Partee, B. (1975). Montague Grammar and Transformational Grammar. *Linguistic Inquiry*, 6(2):203–300.

Potts, C. (2005). *The Logic of Conventional Implicatures*. Oxford University Press.

Royer, J. (2019). Domain restriction and noun classifiers in Chuj (Mayan). In *Proceedings of NELS 49*, volume 3, pages 87–97.

Schlenker, P. (2005). Minimize restrictors! (Notes on definite descriptions, Condition C and epithets). In *Proceedings of SuB 9*, pages 385–416.

Schlenker, P. (2021). The semantics and pragmatics of appositives. In Gutzmann, D., Matthewson, L., Meier, C., Rullman, H., and Zimmerman, T. E., editors, *The Wiley Blackwell Companion to Semantics*. Wiley-Blackwell.

Shlonsky, U. (2004). The form of Semitic noun phrases. *Lingua*, 114(12):1465–1526.

Sichel, I. (2002). Phrasal movement in Hebrew adjectives and possessives. In Alexiadou, A., Anagnostopoulou, E., Barbiers, S., and Gärtner, H.-M., editors, *Dimensions of movement*, pages 297–339. John Benjamins.

Sichel, I. (In press). Weak and strong articles, diversity, and uniformity. In Armoskaite, S. and Wiltschko, M., editors, *The Handbook of Determiners*. Oxford University Press.

Sproat, R. and Shih, C. (1988). Prenominal adjective ordering in English and Mandarin. In *Proceedings of NELS 18*, pages 465–489.

Wang, L., Reese, B., and McCready, E. (2005). The projection problem of nominal appositives. *Snippets*, 10:13–14.

Wiltschko, M. (2013). Descriptive relative clauses in Austro-Bavarian German. *Canadian Journal of Linguistics*, 58(2):157–189.

Wolter, L. (2006). *That's that: The semantics and pragmatics of demonstrative noun phrases*. Dissertation, UC Santa Cruz.