

**LEXICAL SHARING AND NON-PROJECTING
WORDS: THE SYNTAX OF ZAPOTEC ADJECTIVES**

George Aaron Broadwell
University at Albany, State University of New York

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Miriam Butt and Tracy Holloway King (Editors)

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Abstract

A Zapotec attributive adjective forms a single phonological word with the noun that it modifies. This N+Adjective combination is an instance of an element that corresponds to one word in phonology, but two words in syntax. These mismatches can be successfully captured in the lexical sharing approach of Wescoat (2002).

1 Introduction¹

Sadler and Arnold (1994), Sadler (2000) and Toivonen (2001, 2003) have introduced the idea of non-projecting words into LFG, focusing on data from Welsh and Swedish. In both Welsh and Swedish, the non-projecting elements are phonologically independent words. However, Toivonen (2001, 2003) argues that the criteria of syntactic projection and phonological dependence are separable, so it should be possible for non-projecting words to form a phonological unit with another word.

This paper argues for such an analysis in San Dionicio Ocotepc Zapotec (SDZ), an Otomanguan language of Oaxaca, Mexico. In this language, an attributive adjective forms a single phonological word with a preceding noun. I argue that *Adj* is a non-projecting word which adjoins to *N*, and that the two are instantiated as a single word, using the lexical sharing hypothesis of Wescoat (2002).²

SDZ is a head-initial language, as shown in NP (1) and S (2)

- | | | |
|----|-----------------------------|--------------|
| 1) | X-quéét | Juààny |
| | p-tortilla | Juan |
| | 'Juan's tortilla' | |
| 2) | Ù-dàw | bè'cw gèèt. |
| | com-eat | dog tortilla |
| | 'The dog ate the tortilla.' | |

Topic and focal phrases frequently appear preverbally. I have italicized the gloss corresponding to such phrases to mark their special discourse function.

¹ I thank Joan Bresnan, Michael Galant, Tracy Holloway King, and Michael Wescoat for useful comments on this paper. Special thanks are due to Luisa Martínez, who supplied all the data for this paper.

The orthography for San Dionicio Ocotepc Zapotec is adapted from the practical orthographies for other Zapotec languages spoken in the Valley of Oaxaca. In the SDZ orthography, <x> = /ɣ/ before a vowel and /ʃ/ before a consonant, <xh> = /ʃ/, <dx> = /dʒ/, <ch> = /tʃ/, <c> = /k/ before back vowels, <qu> = /k/ before front vowels, <e> = /ɛ/ and <ey> = /e/. Doubled vowels are long. SDZ is a language with four contrastive phonation types: breathy <Vj>, creaky <V'V>, checked <V'>, and plain <V>. High tone is marked with an acute accent, low with a grave. Nominal tones are affected by position within the intonational phrase, and so nouns may show slightly varying tones from example to example. Please note that the representation of /ɛ/ and /e/ in the practical orthography which is found in this paper differs from that found in my previous publications on SDZ.

Ordinary affixes are separated from the stem by the hyphen; clitics are separated by =, and the compound boundary is shown by +. Glosses use the following abbreviations: aff = affirmative, com = completive aspect, def = definite future aspect, hab = habitual aspect, neg = negative, p = possessed, pot = potential aspect, pred = predicative, 1s = 1st person singular, 3 = 3rd person human (ordinary respect level), 3i = 3rd person inanimate.

² I follow Toivonen (2003) in indicating a non-projecting word with a circumflex over its part of speech label.

- 3) Bè'cw ù-dàw gèèt.
 dog com-eat tortilla
 'The dog ate the tortilla.'

Adjectives follow nouns in NP, and the N+Adj combination forms a single, compound-like structure:

- 4) Ù-dàw Juáàny gèt+ró'
 com-eat Juan tortilla+big
 'Juan ate the big tortilla.'

While the attributive adjectives form a single word with the noun they modify, predicative adjectives are independent words:

- 5) Ró' gèèt.
 big tortilla
 'The tortilla is big.'

In this paper, I will give an account of the syntactic and morphological relationship between predicative and attributive adjectives that crucially relies on the notions of non-projecting word and lexical sharing.

2 Evidence for single-word status

2.1 Phonological evidence

In SDZ, attributive adjectives form a word with the preceding noun.³ This phonological union has a number of consequences, all ultimately related to stress placement.

First, because stress regularly occurs on the final syllable of a word, the final adjective in such sequences is stressed and the noun is unstressed. Second, the unstressed vowel of the N is now short.⁴ (In the following examples, the stressed syllable is underlined.)

- 6) Ù-dàw Juáàny gèèt
 com-eat Juan tortilla
 'Juan ate the tortilla.'
- 7) Ù-dàw Juáàny gèt+ró'
 com-eat Juan tortilla+big
 'Juan ate the big tortilla.'

SDZ has four contrastive phonation types in stressed syllables – plain (V), breathy (Vj), checked (V'), and creaky (V'V):

³ The earliest explicit claim that the noun and adjective form a single phonological word in some varieties of Zapotec seems to be Pickett (1997), for Isthmus Zapotec.

⁴ It is probably most accurate to say that vowels with plain phonation lengthen in stressed syllables; because the vowel in *gèt* is now in an unstressed syllable, it remains short. However, a number of words borrowed from Spanish seem to have underlying long vowels which do not vary in length according to stress, e.g. *sóóp* 'soup'.

8)	bààl	‘bullet’	(plain)
	bêjld	‘fish’	(breathy)
	bè’él	‘meat’	(creaky)
	bê’ld	‘snake’	(checked)

Phonation type contrasts are reduced in unstressed contexts. Because adjectives cause stress-shift, the addition of an adjective often causes a change in phonation type. In the following examples, breathy vowels become plain when unstressed:⁵

9)	bèjl	‘flame’
	bèl+ró’	‘big flame’
10)	bàjd	‘dried maguey leaf’
	bàd+ró’	‘big dried maguey leaf’

In the same context, creaky vowels become checked:⁶

11)	dù’ú	‘rope’
	dù’+ró’	‘big rope’
12)	bè’él	‘meat’
	bè’l+ró’	‘big meat’

The stress-related shifts seen in these examples are like those seen in clear cases of compounding. Compare the vowel shortening in the following example:

13)	gèèt	‘tortilla’	
	xtiilly	‘Spanish’	(< Span. <i>Castellano</i>)
	gèt+xtíily	‘bread’	

There are also tonal effects which are related to stress. SDZ has a floating H tone which docks to the first stressed vowel of a initial focussed phrase.⁷ As a result of the stress shift in N+Âdj sequences, we see a third phonological change — the stressed Âdj attracts the floating H tone and the unstressed N receives default L tone.

Compare the following, in which the object has been fronted to the focus position. In (14) the floating H tone docks to *gèét* ‘tortilla’, but in (15), it docks to the adjective *ró* ‘big’ instead:

⁵ Similar phonation type shifts are documented in Mitla Zapotec (Briggs 1961:9-10).

⁶ Checked vowels show more complex behavior; some remain checked, and some become plain. Clearly, more needs to be said about the phonology of such words, but I will not pursue that issue in this paper.

⁷ More accurately, the H docks to the first stressed vowel of the first intonational phrase within the focussed material. In the examples under consideration here, the focussed phrase is relatively light and shows only one possible phrasing. When the focussed phrase is heavier and more syntactically complex, there is often more than one way to construct the intonational phrases. See Broadwell (2000) for discussion.

- 14) H
 [_{FocP} Géét] ù-dàw Juáàny.
 tortilla com-eat Juan
 ‘Juan ate *the tortilla*.’

- 15) H
 [_{FocP} Gèt+ró'] ù-dàw Juáàny.
 tortilla+big com-eat Juan
 ‘Juan ate *the big tortilla*.’

As a result of all these phonological changes, *géét* in (14) is long, stressed, and high-toned, but *gèt* in (15) is short, unstressed, and low-toned.

2.2 Clitic placement

The N+Adj structure also acts like a single word for the purposes of clitic placement. SDZ has a set of 2nd position clitics, which may occur after the first word or the first constituent of the phrase within their domain. I will give examples using two of these clitics as tests. One such clitic is =*chà*’ ~ =*dxà*’ ‘maybe’; another is the affirmative clitic =*cà*’ ~ =*àc*.⁸ Such a clitic appears after the first word or constituent of CP.

If the initial constituent is a topicalized or focused [N NP], then two positions for the clitic are possible:

- 16) a.) [X-quèèt]=**chà**’ Juáàny ù-dàw bè’cw.
 poss-tortilla=maybe Juan com-eat dog
 b.) [X-quèèt Juáàny]=**dxà**’ ù-dàw bè’cw.
 poss-tortilla Juan=maybe com-eat dog
 ‘Maybe the dog ate *Juan’s tortilla*.’
- 17) a.) Éè, [x-quèèt]=**cà**’ Juáàny ù-dàw bè’cw.
 yes p-tortilla=aff Juan com-eat dog
 b.) Éè, [x-quèèt Juáàny]=**cà**’ ù-dàw bè’cw.
 yes p-tortilla Juan=aff com-eat dog
 ‘Yes, the dog ate *Juan’s tortilla*.’

This flexibility in clitic position is found with almost every type of noun phrase. However, an initial [N+Adj] combination may never be split up by a clitic:

⁸ These clitics show the following allomorphy: For the ‘maybe’ clitic, =*chà*’ [tʃàʔ] is found after voiceless segments; =*dxà*’ [dʒàʔ] after voiced segments. For the affirmative clitic, =*cà*’ is found after a consonant and =*àc*’ after vowels.

- 18) a. [Gèt+ró']=**dxà'** ù-dàw bè'cw
 tortilla+big=maybe com-eat dog
 'Maybe the dog ate *the big tortilla.*'
- b.) *[Gèt=**chà'** ró'] ù-dàw bè'cw
 tortilla=maybe big com-eat dog

Furthermore, phrases like the following show us that the N+Âdj combination may count as the first word in a more complex NP:

- 19) [X-qùeht+ró']=**dxà'** Juáàny ù-dàw bè'cw
 poss-tortilla+big=maybe Juan com-eat dog
 'Maybe the dog ate *Juan's big tortilla.*'

Thus the evidence for the [N+Âdj] combination as a single phonological word is strong. This implies that there must be a productive lexical rule joining N+Âdj together.

3 Lexical sharing

We need a lexical rule which combines a N and a Âdj of the following type (using the conventions of Wescoat 2002):

$$8.) \Phi \leftarrow N, \Psi \leftarrow \hat{A}dj \quad \Rightarrow \quad [\Phi - \Psi] \leftarrow N \hat{A}dj$$

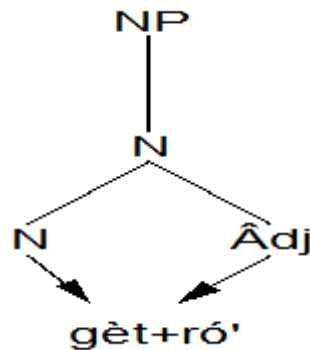


Figure 1 A lexical sharing configuration

This rule is interpreted as follows 'If Φ instantiates a N and Ψ instantiates $\hat{A}dj$, then $\Phi - \Psi$ is a word which instantiates N $\hat{A}dj$.' This points toward an analysis of Zapotec where attributive adjectives are non-projecting words, adjoined to N, as in figure 1. The lexically shared instantiation is shown with arrows from both N and $\hat{A}dj$ pointing to the word *gèt+ró'*, indicating that it instantiates both these terminal nodes.

4 Why have two syntactic nodes?

4.1 Scope of adjectives

Although the adjective is part of the same phonological word as the preceding noun, it has scope

properties that suggest syntactic independence. Consider the following examples:

- 20) R-yúlàz=à' càfé cùn téy+nààxh.
 hab-like=1s coffee and tea+sweet
 'I like sweet [tea and coffee].' (both are sweet)
 'I like [sweet tea] and [coffee].' (only tea is sweet)

- 21) Ò-dàw=à' gàmòn cùn dzìtbéédy+nàxíí.
 com-eat=1sg ham and egg+salty
 'I ate salty [eggs and ham].' (both are salty)
 'I ate [salty eggs] and [ham].' (only eggs are salty)

These sentences have two readings – one in which the adjective takes scope only over the immediately preceding noun, and one in which it takes scope over both nouns. The wide scope reading suggests a c-structure like that shown in Figure 2:

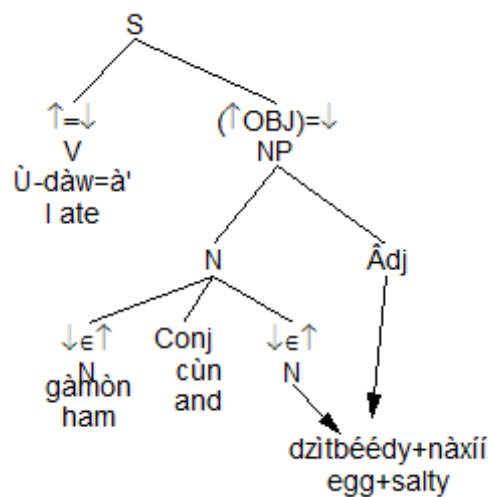


Figure 2 Lexical sharing and coordination

If N+Adj compounds were purely lexical, we would not expect such scopal properties. Compare English sentences like the following, where *black* is unambiguous in scope when in a compound (a), but ambiguous as an attributive adjective (b):

- 22) a.) I saw blackbirds and squirrels.
 b.) I saw black birds and squirrels.

Thus SDZ N+Adj combinations show behavior like independent attributive adjectives in English, and not like the adjective portion of an English compound.

4.2 Adjectives with complements

A second argument for the c-structure representation of the adjectives is found in the behavior of adjectives with complements. Though the combination of N+Adj into a single word is obligatory with a single-word adjective, the facts change if the Adj heads a phrase.

One case in which Adj heads AdjP is in the comparative:

- 23) Ngìw góórrd=rù quèy nàà' b-èèny gáàn.
 man fat=more than me com-do win
 'The man fatter than me won.'
- 24) R-yùlààz=à' sóóp nàxì=rù quèy bè'l.
 hab-like-1s soup salty=more than meat
 'I like the soup that is saltier than the meat.'

In these cases, the N and Adj no longer form a single word, as shown by both the phonological evidence and the clitic placement tests.

Looking first at the phonological evidence, we see that in the following example, *bèjl* 'flame' has breathy phonation in isolation. This reduces to plain phonation when followed by a non-projecting $\hat{A}dj$:

- 25) bèjl 'flame'
 bèl+ró' 'big flame'

However, if the Adj is necessarily projecting, then the phonation change does not occur:

- 26) tòyby bèjl ró'=rù quèy stòyby=nì
 a fire big=more than other=3i
 'a fire bigger than the other one'

This shows that the N and Adj do not form the ordinary compound in this case.

Similarly, clitic placement tests also show that the N and the following Adj are now different words, and that a clitic may be placed between them:

- 27) Éèy, ngìw=cà góórrd=rù quèy nàà' b-èèyny gáàn.
 yes man=aff fat=more than me com-do win
 'Yes, the man fatter than me won.'
- 28) Éèy, sóóp=cà nàxì=rù quèy bè'l r-yùlààz=à'
 yes soup=aff salty=more than meat hab-like-1sg
 'Yes, I like the soup that is saltier than the meat.'

We can contrast these sentences with those where the adjective has no complement. In such cases, the N+ $\hat{A}dj$ combination is still a single word, which cannot be penetrated by a clitic:

- 29) a. Éèy, ngìw góórrd=cà b-èèyny gáàn.
 yes man fat com-do win
 'Yes, the fat man won.'
- b. *Éèy, ngìw=cà góórrd b-èèyny gáàn.
 yes man=aff fat com-do win

So the correct tree for the N followed by a non-projecting attributive adjective is as in Figure 3:

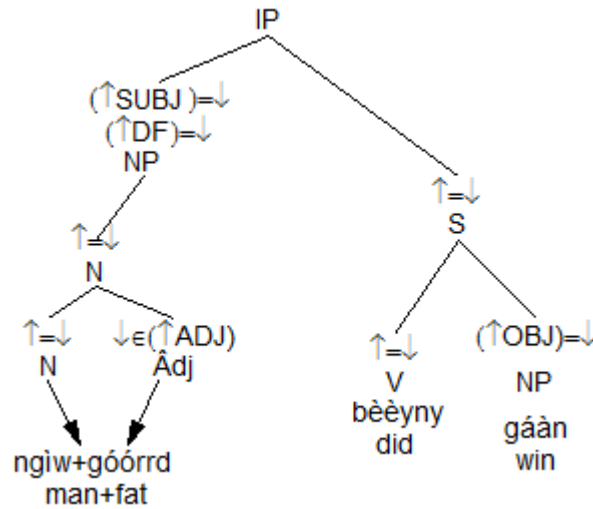


Figure 3 Lexical sharing with a non-projecting adjective

However, when the adjective has a complement, the tree is instead as in Figure 4:

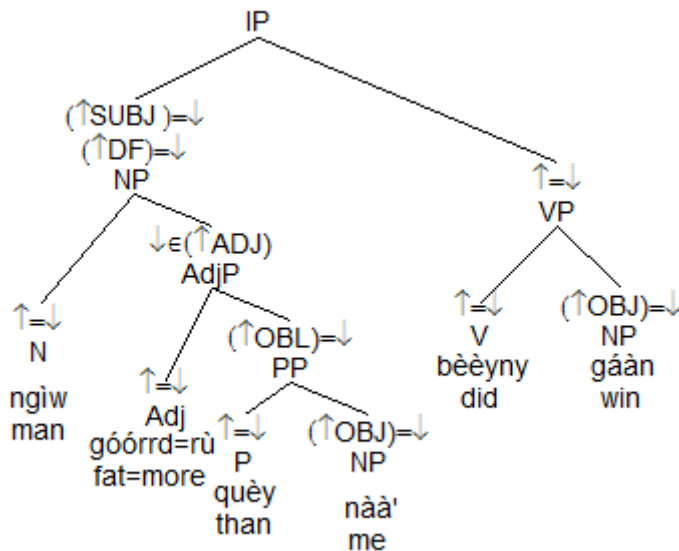


Figure 4 No lexical sharing with a projecting adjective.

These facts show us that the lexical rule combining noun and adjective only applies to non-projecting adjectives. Thus a coherent lexical-sharing analysis needs to make use of the non-projecting word hypothesis.

One additional consideration. Since lexical sharing is obligatory for a non-projecting adjective, we need to rule out a tree like the following, where the Adj projects a AdjP, rather than appearing as a non-projecting word, as in Figure 5:

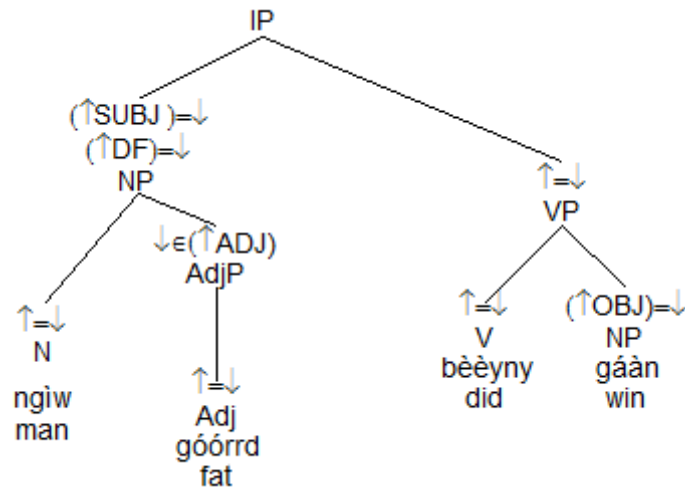


Figure 5 Violation of Economy of Expression

Following Toivonen (2003), I will assume that a tree of this sort is suboptimal relative to the tree with a non-projecting $\hat{A}dj$, due to Economy of Expression (Bresnan 2001), since it contains an additional phrasal node (AdjP).

5 Predicative and attributive adjectives

5.1 Morphological background⁹

In the examples (4) and (5) above (repeated below), the adjective *ró'* serves as both a predicative and attributive adjective with no change.

- 30) Û-dàw Juáàny gèt+ró'
com-eat Juan tortilla+big
'Juan ate the big tortilla.'

- 31) Ró' gèèt.
big tortilla
'The tortilla is big.'

Adjectives of this type, which are identical in their predicative and attributive forms, I will label Group A (Invariable) adjectives. Some other examples of native Zapotec adjectives from Group A:

⁹ The account given here of morphologically defined subgroups of predicative and attributive adjectives is influenced by the treatments of similar phenomena in two related Zapotec languages – Mitla Zapotec (Briggs 1961:67-70; Stubblefield and Stubblefield 1991:208-210) and San Lucas Quiaviní Zapotec (Munro 2002; Munro and Lopez 1999; Lee 1999; Galant 1998).

32)	ldàà'	'loose, slack'
	mèw	'dirty'
	dè'	'narrow'
	chíiny	'skinny'
	ldíí	'straight; upright'
	cúújxh	'squint-eyed'
	nàjxh	'sweet'
	bí'ch	'small'
	nnà'á	'heavy'
	gòòp	'mute'
	méèxh	'blond'
	gííby	'stingy'
	lèèt	'empty'

It appears that all adjectives borrowed from Spanish also go into Group A:

32)	máàl	'bad'	(<Span. <i>malo</i>)
	còchíin	'filthy, disgusting'	(<Span. <i>cochino</i>)
	líièst	'ready, intelligent'	(<Span. <i>listo</i>)
	tràbáàgw	'difficult'	(<Span. <i>trabajoso</i>)
	plòòj	'lazy'	(<Span. <i>flojo</i>)
	súújl	'blue'	(<Span. <i>azul</i>)

Group A (Invariable) appears to be the open, productive class of adjectives in SDZ.

However, many adjectives show different forms in their predicative and attributive uses. Adjectives which show a morphological change between their predicative and attributive uses, I will label Group B (Variable) adjectives. The most frequent change is the addition of *na-*:

33)	a.	Ná-dxè'ch =dù'úxh	ngìw=gà
		pred-irritable=very	man=that
		'That man is very irritable.'	
	b.	Ngìw+ dxè'ch =dù'úxh	Juáàny.
		man+irritable=very	Juan
		'Juan is a very irritable man.'	

Here are some examples of adjectives from Group B:

34)	<i>Attributive</i>	<i>Predicative</i>	<i>Gloss</i>
	dxè'ch	nà-dxè'ch	'quick-tempered; irritable'
	yààn	nà-yààn	'spicy'
	bíièz	nà-bíièz	'dry'

A few adjectives appear to contain a 'frozen' *n-* or *na-* prefix, which appears in both predicative and attributive forms in SDZ. They are thus synchronically Group A (invariable) adjectives in SDZ. Adjectives in this group include *ngààs* 'black' and *ngàjts* 'yellow'.

- 35) a.) Ngààs bè'cw.
black dog
'The dog is black.'
- b.) bè'cw+ngààs
dog+black
'black dog'
- c.) *bè'cw+gààs

Comparison with nearby Zapotec languages (Mitla Zapotec, SLQZ) shows that many of these adjectives are Group B (Variable) in those languages. Thus the diachronic change is that some adjectives in SDZ have moved from the lexically restricted Group B (Variable) into the open class Group A (Invariable).

There are also a few adjectives that seem to still be in the process of changing from Group B to Group A. For these adjectives, the predicate must have the na- prefix, but this prefix is optional in the attributive:

- | 36) | <i>Predicative</i> | <i>Attributive</i> | <i>Gloss</i> |
|-----|--|--|--------------|
| | nàldàj | ldàj ~ nàldàj | 'bitter' |
| 37) | a. Nà-ldáj
pred-bitter | sèrbèjs.
beer | |
| | | 'The beer is bitter.' | |
| | b. *Ldáj
bitter | sèrbèjs.
beer | |
| 38) | Íity r-yùlááz=tì=à'
not hab-like=neg=1s | sèrbèjs+(nà-)ldáj.
beer+(pred-)bitter | |
| | 'I don't like bitter beer.' | | |

The reverse pattern is also found for a few adjectives:

- | 39) | <i>Predicative</i> | <i>Attributive</i> | <i>Gloss</i> |
|-----|----------------------------------|---|--------------|
| | xú'ny ~ nàxú'ny | xú'ny | 'wrinkled' |
| 40) | a. (Nà-)xú'ny
(pred-)wrinkled | x-cùtòny=á'.
p-shirt=1s | |
| | | 'My shirt is wrinkled.' | |
| | b. R-àp=á'
hab-have=1s | x-cùtòny+(*nà-)xú'ny
p-shirt+(pred-)wrinkled | |
| | | 'I have a wrinkled shirt' | |

5.2 The syntax of predicative adjectives

The examples given below show Group A (Invariable) and Group B (Variable) predicative adjectives acting as the sole predicate of a sentence:

- 41) Nà-ldáj sèrbèjs.
pred-bitter beer
'The beer is bitter.'
- 42) Péncw yààg.
bent tree
'The tree is bent.'

Adjectival predicates show a different syntax than most verbal predicates. I argued in Broadwell (2002, 2005) that the clausal syntax of San Dionicio Ocotepéc Zapotec has two X^0 positions for verbal predicates, and this will be important for understanding the syntax of predicate adjectives. Let me briefly review that argument before returning to adjectives.

5.2.1 The definite future

SDZ, like other Valley Zapotec languages, has two different aspects which are translated into the future in English/Spanish. The definite future is marked with *s-* or *z-*; the potential has a number of allomorphs, the most common of which is *g-*:

- 43) S-àw báád bèld yù'ù.
def-eat duck snake earth
'The duck is going to eat a worm.'
- 44) G-âw báád bèld yù'ù.
pot-eat duck snake earth
'The duck is going to eat a worm.'

The difference between these two is subtle and Lee (1999) has done the most careful investigation of the semantics. The names of the definite future reflects its use with future events that are more certain and also perhaps closer in time. The potential is appropriate with a wider range of future events and shows less of a speaker commitment to the certainty or proximity of the event.

Despite the close semantics, verbs in the potential and future aspects show strikingly different syntactic properties, and most of these properties follow from the assumption that a verb in the definite instantiates both the Infl and V positions, while a verb in the potential remains in the ordinary V position.¹⁰ Evidence for this is discussed in the following sections.

5.2.2 Lack of internal topic/focus in the definite future

SDZ has a preverbal position for elements which bear a discourse function such as TOPIC or FOCUS.¹¹

¹⁰ My analysis here is slightly altered from that in Broadwell (2005), where I did not employ lexical sharing. My analysis is also clearly influenced by Lee (1999), in which SLQZ verbs in the definite future move into [Spec, FocP].

¹¹ In Broadwell (2002), I call this the internal prominence (i-prom) position, to distinguish it from a CP-adjoined position for external topics (e-topic). In that paper, I also give more detailed argumentation

This preverbal position is not possible when the verb is in the definite future aspect (*s-/z-*). In contrast, this position is possible when the verb is in the potential aspect.

- 45) S-àw báád bèld yù'ù.
def-eat duck snake earth
'The duck is going to eat a worm.'
- *Báád s-àw bèld yù'ù. *TOP/FOC definite future
duck def-eat snake earth
- 46) G-âw báád bèld yù'ù.
pot-eat duck snake earth
'The duck is going to eat a worm.'
- ✓Báád g-âw bèld yù'ù. ✓TOP/FOC potential
duck pot-eat snake earth
'*The duck* is going to eat a worm.'

5.2.3 Manner adverbs and the definite future

Manner adverbs (Adv_{Manner}) must not precede a verb in the definite future, though these adverbs may precede a verb in other aspects.

- 47) a.) Diáp g-ú'ld Màrii. ✓ Adv_{Manner} Potential
strongly pot-sing Maria
'Maria will sing strongly/loudly.'
- b.) *Diáp s-ù'ld Màrii. * Adv_{Manner} Definite Future
strongly def-sing Maria
- c.) S-ù'ld Màrii diáp.
def-sing Maria strongly
- d.) G-ú'ld Màrii diáp.
def-sing Maria strongly

Pursuing this latter approach, the examples above will have the following (simplified) representations:¹²

for the multiple discourse roles of elements that occupy the i-prom position.

¹² For expository purposes, the trees shown in this figure show potential positions for focused and adverbial positions in parentheses. The excluded positions in the definite future are shown with strike-out to emphasize their unavailability.

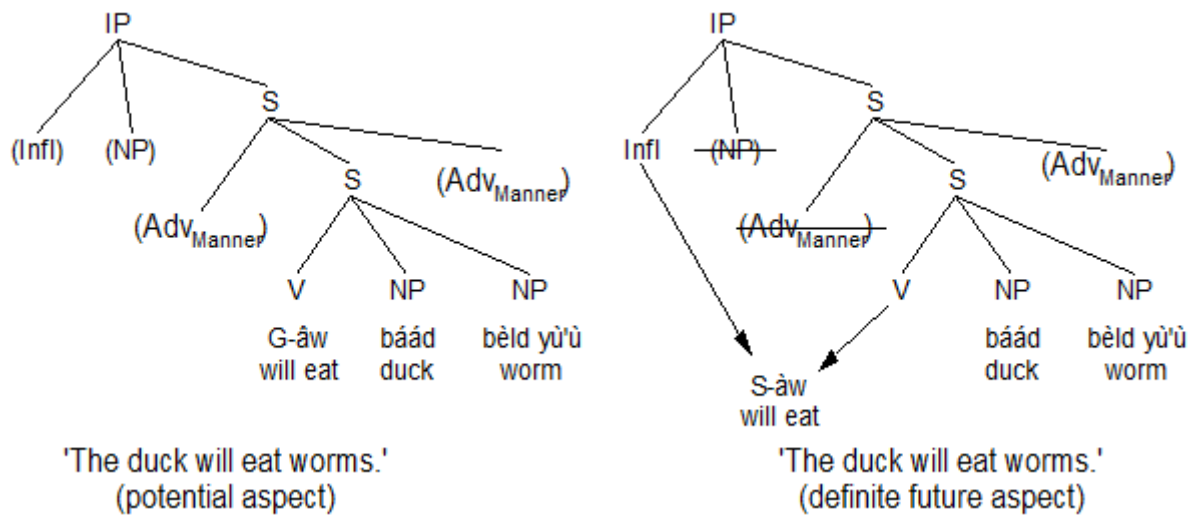


Figure 6 The syntax of potential and definite future aspects compared

These trees show that when the verb is in the definite future aspect, it instantiates both the V and Infl positions. It thus precludes words in the Adv_{Manner} (manner adverb) position and the [Spec, IP] (internal TOP/FOC) position. This is an example of what Wescoat (2002:24-30) calls intermediate constituent suppression, whereby normally available phrase-structure positions become unavailable in cases of lexical sharing.

5.2.4 Predicate adjectives and phrase structure

Predicate adjectives show a syntax very similar to that of verbs in the definite future aspect. In particular, the internal TOP/FOC position is unavailable:¹³

- 48) a.) Ngáás gùich+iicy=à'
 black hair+head=1s
 'My hair is black.'
- b.) *Gùich+iicy=à' ngáás.
 hair+head=1s black.

We can capture the similarity between verbs in the definite future and predicate adjectives by writing a lexical rules of the following sort:

$$49) \quad / \Phi / \quad \leftarrow \quad \begin{array}{l} [\text{POS } V] \\ [\text{VCLASS } 1] \end{array} \quad \Rightarrow \quad /s-\Phi/ \quad \leftarrow \quad \begin{array}{l} [\text{POS } V+\text{Infl}] \\ [\text{ASP } \text{DEF-FUT}] \end{array}$$

¹³ My language consultant rejects manner adverbs with adjectival predicates, regardless of their position. This is presumably because of semantic incompatibility. For this reason, it is not possible to test the availability of the initial Manner Adverb position.

50) /Φ/ ← [POS V] [VCLASS 2] ⇒ /z-Φ/ ← [POS V+Infl] [ASP DEF-FUT]

These rules say that for a verb instantiated as /Φ/, there is also a form /z-Φ/ or /s-Φ/ which realizes the definite future aspect and that such a form instantiates both the V and Infl nodes. (The difference between the two morphological classes is shown by a VCLASS feature.)

For predicate adjectives, we want similar rules, along the following lines:

51) /Φ/ ← [POS Adj] [ADJCLASS B] ⇒ /na-Φ/ ← [POS V+Infl]

52) /Φ/ ← [POS Adj] [ADJCLASS A] ⇒ /Φ/ ← [POS V+Infl]

These two rules take an Adj and change its part of speech category to the portmanteau V+Infl category. The first rule prefixes /na-/ to adjectives of Class B and the second is a phonologically null derivation for adjectives of Class A.

5.2.5 Lexical entries for irregular adjectives

The adjectives which fall outside the main patterns will be listed in the lexicon. Some, like ‘wrinkled’ (predicative *xú’ny* ~ *nàxú’ny*; attributive *xú’ny*) can be listed as variable as to ADJCLASS. Others like ‘bitter’ (predicative *nàldàj*; attributive *ldàj* ~ *nàldàj*) seem to have alternate underlying forms. Lexical entries for these adjectives would be along the following lines:

53) *xú’ny* ← [POS ADJ], [ADJCLASS A|B], [PRED ‘wrinkled <SUBJ>’]

or *nàldàj* ← [POS ADJ], [ADJCLASS A], [PRED ‘bitter <SUBJ>’]

or *ldàj* ← [POS ADJ], [ADJCLASS B], [PRED ‘bitter <SUBJ>’]

5.2.6 Inflection of predicate adjectives and the use of copulas

I have called the part of speech category for the derived predicate adjectives V+Infl because that is the position that they seem to occupy in the syntax. Still it is not the case that predicate adjectives are identical to verbs in terms of their inflectional possibilities.

Ordinary verbs generally show inflection for six aspects. Five of these are shown below with their most frequent allomorphs:¹⁴

54)	completive	(g)u-/bi-
	continuative	cá(y)-
	potential	ì-/gú-
	habitual	r-/rr-
	definite future	s-/z-

¹⁴ There is also a prefix known as negative aspect, which shows up after certain negative predicates and adverbs. In the interests of space, I omit discussion of it here.

The completive, continuative, habitual, and potential aspect markers are shown for the following fairly regular verb *-ù'ld* 'to sing':

55)	bi-'ld=bí com-sing=3	'S/he sang.'
	cáy-ù'ld=bí con-sing=3	'S/he is singing.'
	r-ù'ld=bí hab-sing=3	'S/he sings.'
	gú-'ld=bí pot-sing=3	'S/he will sing.'
	s-ú'ld=bí def-sing=3	'S/he will sing.'

Predicate adjectives do not show this range of inflection. In SDZ, group B adjectives show the *nà-* prefix in what is called neutral aspect. For adjectives, this is the most normal translation of present tense sentences in English or Spanish.¹⁵

If the clause is to be interpreted in some other aspect, such as completive or potential, then an overt copula is necessary, and the adjective is adjoined to it as a non-projecting word:

56)	Gùuc+sàláàd com:be+salty 'My food was salty.'	x-cómìid=à' p-food=1s
57)	Gáác+sàláàd pot:be+salty 'My food will be salty.'	x-cómìid=à' p-food=1s
58)	Cáyàac+sàláàd con:be+salty 'My food is becoming salty.'	x-cómìid=à' p-food=1s

The pattern of non-verbal predicates which require an overt copula in non-present contexts is fairly common crosslinguistically.

We can capture this restriction by including an aspect specification in the lexical rule that creates the predicative adjectives:

¹⁵ An aspect labelled 'neutral' also appears with verbs, but is restricted to a few semantic categories – primarily verbs of position and speech. See Munro (2002) for a discussion of the relationship between the adjectival and verbal morphological categories.

59) /Φ/ ← [POS Adj] [ADJCLASS B] ⇒ /na-Φ/ ← [POS V+Infl] [ASP NEUTRAL]

60) /Φ/ ← [POS Adj] [ADJCLASS A] ⇒ /Φ/ ← [POS V+Infl] [ASP NEUTRAL]

Because the predicative adjectives that result from this rule already have an aspectual value, they are not eligible to undergo additional aspect morphology. So changing their part of speech to V+Infl does not imply that they are eligible for the full range of verbal morphology.

The combination of copula and non-projecting adjective counts as a single word by the clitic placement tests:

- 61) a. Gùuc+sàláàd=cà x-cómìid=à'.
com:be+salty=aff p-food=1s
'Yes, my food was salty.'
- b. *Gùuc=cà sàláàd x-cómìid=à'.
com:be=aff salty p-food=1s
'Yes, my food was salty.'

However, these combinations of copula and adjective do not preclude a preceding topic:

- 62) a. Gùuc+ngáás gùich+iìcy=à'.
com:be+black hair+head=1s
'My hair was black.'
- b. Gùich+iìcy=à' gùuc+ngáás.
hair+head=1s com:be+black

Contrast this last example with the same pair in neutral/unmarked aspect (repeated from above):

- 63) a.) Ngáás gùich+iìcy=à'
black hair+head=1s
'My hair is black.'
- b.) *Gùich+iìcy=à' ngáás.
hair+head=1s black.

We thus need additional lexical rules which produce the combination of copula and adjective. However, these rules need to yield a V, rather than a V+Infl.¹⁶

¹⁶ I have let these morphological rules directly spell out the phonological realizations of the different aspectual forms of the Copula+Adj combination. A more elegant morphological rule could use a rule of referral to point to the forms of the copula already present in the lexicon.

- 64) /Φ/ ← [POS Adj] ⇒ /gùuc-Φ/ ← [POS V]
[ASP COM]
- /Φ/ ← [POS Adj] ⇒ /gáac-Φ/ ← [POS V]
[ASP POT]

Note the interesting contrast between these rules which yield a.) a Copula+Adj with the part of speech V and b.) the rules that make adjectives predicative, which yields a word of the V+Infl type. The latter type will entail lexical sharing and intermediate constituent suppression, while the former will not.

Unlike the N+Adj combination, there is no good evidence that the Copula+Adj combination needs to be represented at c-structure. Because only the copula combines via this rule, it is not possible to construct examples that show a scope ambiguity comparable to that seen with nouns and adjectives.

However, it is possible to have sentences where the adjectival portion of the Copula+Adj compound has a complement:

- 65) Gùuc+ró'=rú gèèt quèy gètù'.
com:cop+big=more tortilla than tamale
'The tortilla was bigger than the tamale.'

However, it is impossible to have an order in which the adjective forms a constituent with its complement:

- 66) *Gùuc+ró'=rú quèy gètù' gèèt.
com:cop+big=more than tamale tortilla
'The tortilla was bigger than the tamale.'

- 67) *Gùuc gèèt ró'=rú quèy gètù'.
com:cop tortilla big=more than tamale
'The tortilla was bigger than the tamale.'

Thus the Copula+Adj combination is unlike the N+Adj combination; the Copula+Adj is always a single word, while N and Adj are not.

Thus we see evidence of lexical sharing with the attributive adjectives and with predicative adjectives in neutral aspect as well. Predicate adjectives compounded with a copula, however, act like simple verbs in syntax, and show no evidence of lexical sharing.

This is a complex set of facts, but a carefully articulated inventory of lexical rules, lexical sharing, and non-projecting words allows a satisfying explanation of the syntax of Zapotec adjectives

6 Conclusion

Zapotec attributive adjectives are persuasive examples of non-projecting words which form a single phonological word with the words to which they adjoin. An LFG analysis of such constructions in terms of non-projecting words and lexical sharing successfully captures the fact that the Zapotec construction acts as two words syntactically, but a single word in phonology. This analysis relies on the distinction between projecting and non-projecting words introduced by Sadler and Arnold (1994), Sadler (2000) and Toivonen (2001, 2003). It also lends support to the lexical sharing hypothesis of Wescoat (2002) in which a single phonological word may instantiate more than one syntactic terminal.¹⁷

¹⁷ See also Kim, Sells, and Wescoat (2004) for an HPSG analysis of Korean using lexical sharing.

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